

**TONS OF
TIPS
FOR YOUR
MACHINE**
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COMPUTER **EXPRESS**

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

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8-BITS



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AMSTRAD'S SECRET PCWs!



EXCLUSIVE!

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Commodore chief admits:

"We cocked it up..."

Find out what, how and why – page 4



CDTV: you've read the hype now see the reality.
Read the Express field test – pages 55 & 56



Frontend

What a twisty turny thing the world is and here at Frontend we show you just how weird things can get if they really try

HOME HELPING CHIPS MAKE DOMESTIC BLISS

Since the 1950's when cartoon characters were sent scurrying by a matic carpet cleaner, the dream of the robot-run house has long been cherished.

Now the dream is closer to becoming a reality for the person in the street. Californian company, Echelon has announced the development and testing of a new chip which, the company claims, can link basic household appliances.

Called the Teuron, the chip

is able to create Local Operating Networks (LOPNs). These LOPNs effectively link appliances so that they run in pre-defined harmony.

For example, you could set up your stereo or CD player, or CDTV to begin playing your favourite, most relaxing tune, as soon as you hit the switch which opens your garage door at the end of the day.

Unlike previous systems which have been put on test in show homes throughout the States and Japan, Neuron

technology is looking to go big league with licensing deals already having been signed with Motorola and Toshiba.

Neuron is also making positively evangelical noises about the potential of its system.

Echelon's executive business development director, Richard Kagan is claiming, "We are aiming to have 50 per cent of all the electrical appliances on the planet using our Neuron chips". We can only wait and see, as always. ■

HACK WORMS

Cyberpunk: Outlaws and Hackers on the Computer Frontier is new book published in the United States, and yet unavailable in this country.

Written by Katie Hafner and John Markoff, it is already selling well in the cyber-conscious States. It details examples of hacking such as the infamous Internet Worm, which was allegedly placed into major systems by Robert Morris. In fact the book has been

called in Morris's trial in the US Supreme Court. It is also to be one of the main topics of discussion at major meeting in New York entitled Hackers, Computer Crime and First Amendment issues. ■



GET THE MOST OUT OF YOUR AMIGA

If you've got an Amiga or you're thinking of buying one - don't miss next week's New Computer Express, or you'll miss out on a 24-page colour supplement covering everything you need to know about the Amiga.

Art, DTP, Amiga DOS, programming, upgrading, beginners, business, COMMIS and hardware - it's all up for grabs. FREE! ■

Acorn gets Whitbread best



+ Can British athlete/milkie Fatima Whitbread possibly hope to keep up with the pace of the Acme Archimedes? With a six figure sum as incentive, maybe.

Acorn Computers, the company responsible for the super-quick, RISC (reduced instruction set computing) based Archimedes has signed what could be a six-figure deal with javelin throwing champion, Fatima Whitbread's athletics club.

The Thirsk, Essex-based Chafford Hundred Athletics Club numbers not only Edexcel amongst its stars, but also Linford Christie, Colin Jackson, Steve Backley and John Regis all of whom have represented their country at international competition level. The deal means that you will get to see stars people at Acorn sponsored events. They will also endorse Acorn products in advertising material.

Not only does the AMetrics club get the much needed sponsorship, it will also use the publicity to further the careers of up and coming sportschildren. According to Ms Whitbread: "We are keen to encourage young athletes to develop, especially those who are from disadvantaged backgrounds". ■

Frontend Frontend Frontend



* Sports reporting isn't all cliché, sick pavilions and eco-elements. If you have the 'write' equipment and a fresh attitude you could change the fate of John Motson as we knew it. And Tandy might be pleased to offer you the means to do this. ■

Cub Reporters

Students from West Yorkshire are getting a taste of the reporter's life with a little help from electronics giant, Tandy.

They are being supplied with 100 Tandy WP2 portable word processors to go out and gather news after the Irkville Student Games currently being held in Shelfield.

Each day they return to the classroom with the WP2s and download their reports and interviews to a host PC which is then used to produce a Sharing The Games, a daily newspaper for the games event.

Each day, the editorial team comes from a different school and they are competing to see who can turn out the most professional results.

Output for Sharing The Games is by a laser printer with basic computer graphics being used to break up the page with illustrations. ■

AND THE CLOCK STRUCK THIRTEEN

It's probably the most hi-tech and Orwellian time and motion study ever, staff at Olivetti's Cambridge research labs are being monitored by means of tiny, infra-red 'active badges'.

This has led civil rights campaigners, Liberty (Formerly The National Council for Civil Liberties) to warn that such a system could be misused.

Liberty is claiming that, because there are no safeguards on the system it might well be used to invade the privacy of individual members of staff as they go about their everyday business.

The badges which are similar to those currently being tested on criminals in the US, measure 5cm x 5cm and work in unison with transmitters placed around the building.

Basically the system keeps an 'eye' on Olivetti by logging staff movements and storing the constantly updated data on Local Area Network (LAN) based PCs and workstations. Apparently the wearing of badges is optional. And one member of staff has been reported as saying that they don't really matter because, "Everyone knows everyone else". Who said they didn't? ■

BIG BRUCE IS WATCHING

It is not only Orwell which is monitoring people in a daily, even hourly basis, now that the Clock Watch Project, the authorities in Perth, Australia also feel the need to keep an eye on their citizens.

The city fathers have decided to expand their computer controlled traffic surveillance system to keep track of speed limit violations. This has lead to widespread fears from civil liberties organisations which suggest it is the last frontier system that is capable of keeping another eye on the Pertherites' whereabouts on a 24 hour basis.

The campaigners fear that the more data that is held the less privacy an citizen has been guaranteed from snooping on drivers by police or motorists in a traffic control device such as the TSD. However, one out of ten citizens say they did not object. ■

Eastern robotics • Household chips • Arc gets sporty • Are yo

Far Eastern robots slip floppy disks

A new 250,000-foot-square factory has been set up in Singapore to manufacture floppy disk drives. "Big deal," you say. Well it is if you consider that it is the first of its kind to be 'managed' entirely by robots.

According to Luis Orban, a spokesman for Western Digital, "The new plant can produce 5,000 drives a day, a

rate drive every 15 seconds."

The factory which belongs to Western Digital does not have a single human on operation, so far. It is the first new facility to be set up by the company since the closure of its Puerto Rico plant in December 1990.

Just what the robots think of the situation has not been reported as yet. ■



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DTP looks great on the screen, but can this quality be matched in output? Express puts Epson's EPL-7500 laser printer to the test – page 53



CDTV – the reality

Commodore says CDTV will fit into your sitting room like a VCR. We put theory into practice with a hands-on review – pages 55 & 56

EVERY WEEK

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Pump up your PC!

A 2.5MHz SOTA board is up for grabs

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COMPUTER CALAMITIES

SAFETY DEPOSIT

You'll find the rest of the平安 office now prepared for the present safety deposit boxes. Safely is a registered service mark of the平安 office, which also manufactures and sells safes, money boxes and cash drawers. They are built with special features such as automatically safe lock and alarm systems. The平安 office has five branches.



• What is the similarity between a BR locomotive and a Boeing 747? What come might say that the cars are not fit for off But more to the point, BR is now adapting a black box data recording system.

The BR black box

British Rail is currently testing out a new warning system, called Automatic Train Protection (ATP), similar to the black box system used in aircraft.

This week, Mike Bryce of Express reports on the one of the Japanese test driver who drove home having put a few holes in the reality wall and crashed into a tree which he was sure would simply melt away. ■

The new warning system is able to control the way in which a driver actually controls a train. Using the present system, a driver can see, and not acknowledge a signal, and can then go straight through it without understanding its meaning. ATP can overcome any such response. It does this by monitoring both the signal and the driver's reactions to it.

The black box angle of ATP keeps a record of all data received in the cabin, as well as a variety of the train's basic operations such as door opening and closing, and the minute by minute workings of the local train system.

Data collected in this way can be used in inquiries following such disasters as the Clapham tragedy, and the more recent crash just outside of Glasgow, Scotland.

Network South East is already planning to invest some £11 million in the system which is to be installed in engines travelling the routes between Liverpool Street and Cambridge, and Euston to Northampton. No date has as yet been announced for a full national implementation of ATP. ■

SHOOT FROM THE LIP

"So we won't be entering the console market in the UK. The games are more expensive and there is no educational benefit".

Commodore UK's managing director speaking to The Independent on Sunday about the biggest mistake he has made. See page 4 for the full and startling details.

Now the omnipotent force in the booming UK video games market, world leader Nintendo moves into top gear this month...

According to the office Chambers' English Dictionary, Omnipotency means 'all-powerful'. Maybe the person

who wrote this over-enthusiastic press release should have kept their eye on the recent Nintendo versus Galoob Toy court case about the Game Genie – which is the all powerful Nintendo inst.

"We won't rip up the IBM company in a bad economic cycle, but after six years with one approach... it's time to try another".

IBM's chief executive officer, John Akers explaining his ideas for corporate strategy to his staff following the Apple computers deal, and before the declaration of a 10 per cent drop in profits for the vast corporation.

You being watched? • BR black box



Power savers

How many times have you been sitting word processing or programming when the power to your computer is suddenly cut, before you've saved your work? Now a range of small uninterrupted power supplies (UPSs) has been released to help prevent such events from occurring.

Juul-Labberg has launched the MicroPower range of UPSs which will protect computers from power cuts, spikes and surges and other similar unwanted interruptions.

There are three small-sized models which cover 1, 2 and 5VA. Voltage power is affected in any of the above ways then the UPS's internal batteries will provide full power cover from between 8 to 25 minutes depending on the model. And if extra time is needed, external battery packs are available.

To get more details, call Avell on 0708 853444. ■

Mensa for Amiga users

Matthew Greenman has formed a Commodore Amiga user's group with a difference - this one's for Amiga users with a very high IQ. Not surprisingly, he's called it the Amiga Users Mensa Sig.

The sig special interest group is now operating on the Amiga area of the Compuserve online system. Plans call for the group to produce a paper newsletter and sign up offline users across the US and around the world.

According to Greenman, he's not aiming to form an elitist organisation, as Mensa is viewed by many, but merely use the Mensa tag to form a high-powered user group for the Amiga. Because of this, he allows members with IQ levels lower than 140 to join the user group as associate members.

Contact: Matthew Greenman, PO Box 279, Singletown, NY 12159, USA. Email: 73367.3051 on Compuserve or via Usenet on 73367.3051@compuserve.com

Commodore's Steve Franklin gives candid interview

C64GS IS A DISASTER!

"Tim sorry, we cocked it up in the UK". So says Commodore's (UK) managing director Steve Franklin in an interview with the Independent on Sunday.

During the interview Franklin slammed the C64GS as "absolutely disastrous". He also stated that his company "... would not be ordering the console market in the UK".

Franklin buried his seal about various mistakes which he has made since joining the company in 1987. Asked what his biggest mistake had been, he replied: "... trying to sell home

computer packages containing non-computer-related products". Then he gave a list of three specific examples:

• The C64GS - Franklin is particularly pentent about the stripped down version of Commodore's highly successful BBC C64. "We were under a bit of pressure because console have taken off in America. So we took our C64 computer, designed a plastic mould around it to look like a console, and manufactured 80,000 for the UK market, retailing at £499. We spent £150,000 on marketing



* Steve Franklin, managing director of Commodore, owns up to some mistakes in his corporate履歴.

and again it was absolutely disastrous; we sold about 15,000."

• Packaging: British Airways Air Miles vouchers with the £499 Air Miles summer Amiga bundle. The £499 package included Who Framed Roger Rabbit, Starry Night Logos, Heaven's Nestles, and the Spritz paint package from Best Publishing. According to Franklin: "We bought enough Air Miles for 25,000 packages (£320,000 worth to be exact) and we spent about £100,000 on advertising. It was a disaster; I think we sold 5,000 in total".

• The 25,000 C64 Home Entertainment pack which was bundled with guitar synthesizers and personal stereos. "It was another disaster. We sold about 7,000", said Franklin.

However, a stroke of historical luck enabled the company to get shot of the pesant stereos. "When the Berlin Wall came down, the first thing they wanted to buy were personal stereos. There was a great shortage, so we managed to get rid of them," said Franklin.

This did leave some 18,000 guitar synths littering the warehouses, though. ■

FRANKLIN REPLIES

Speaking about the interview, Franklin told Express: "Most people [who took part in the regular series of interviews] only admitted to one mistake. I talked about three. I did not do us any harm. In fact I think that some other people in the industry could get some good from it. After all, if you make mistakes but realize as profitables as Commodore, then you should talk about them; you should learn from them."

In terms of the Commodore's plans for the C64 and console, he was equally positive: "We have decided not to go ahead with the console. However, there are some very exciting plans for the C64 home computer this Christmas. I can't comment on them further, but they are probably the most exciting plans for the machine in five years".

Pocket full of tricks

By using Andrist's Pocket Modem, the Distributed Information Processing (DIP) Pocket PC and Mac Portfolio can now communicate with any other modern-equipped computer.

The Pocket Modem was designed specifically for both these computers and connects to their expansion ports. It uses the battery power of the machines, so no external power supplies are needed.

Communication software comes with the modem that provides VTSI, VT100 and Telnet/Telscript emulators, and enables file transfers with the Kermit, Zmodem and KSCP protocols. The modem itself is Baud approved and can run at the CDTI V32 and V32



speeds, that is, 200 and 1,200 baud. DIP is selling a package that includes the Pocket Modem, Pocket PC, 32K memory card, carrying case and spare batteries for £449.95. This offer is only available until September 30. For further details, call DIP on 0488 306555. ■

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Reds get under the text

The latest version of ORFO, a Russian grammar and spelling checker, is now available for the PC. It has been developed by Informatic of the USSR, and Natural Language Tools, US.

Version 2.3 has, amongst other features, an improved way of adding words to the checker. The highly inflectional nature of the Russian language means that most Russian words have many more different forms than the equivalent English word. By answering three or four questions, a single word can be added to the word list and will be

checked to see if it conflicts with other words. Thus, when a user wants to replace one word form with another, only a single form has to be chosen.

The grammar and spelling checker is compatible with many word processors, including Word Perfect and Microsoft Word. It also features a three million word dictionary, made up of 200,000 word stems. The program requires a PC with more than 640K and a hard disk with at least 1.4M free.

ORFO is available from English Software, 96, 0223 248916. ■

It's the Monster mash

The Monster Stereo Sampler for the ST comes from the same people who produced the Monster Stereo Cartridge.

It is able to sample from a domestic CD player, a personal stereo or HiFi. Once captured, sounds can be modified in three dimensions. Because of sonic mismatching techniques, the Monster makes little call or interplay. For example, owners of SCD2 machines will have 429K in which to store samples.

The product also features real-time filtering compression which enables users to sample at high frequencies, thus stretch the resulting data by up to ten

times while retaining clarity.

It can also automatically sort large samples and save them on several disks. If you have 2Mb worth of sample, it can save 850K on one disk, then format another two and save the remaining data on them.

Aside from these features, it has all the standard sampling functions, including full volume control, cross fader, pan, oscilloscopes and output in mono or stereo. The program also makes extensive use of the STE/M68030.

There's no price yet, but it's likely to be under £60. For info ring MH 0803 503392. ■

Speedy Amiga hard drives

Protar has released the A500HD line of hard drives for the Amiga 500 which, the company claims, are up to five times faster than Commodore's A590.

The basic model, which is a 20MB drive, costs £275, while at the top of the range is a 160MB model priced at £399. RAM memory can be expanded up to 8MB as all of the drives, while cache memory can also be added, to speed up data throughput further.

Aesthetically, the A500HD is like the A590 and many of its other features are similar as well. A SCSI port is included to enable the daisy-chaining of SCSI peripherals, such as other hard drives or tape back up units.

For games players, a switch on the drive tools games software into thinking the drive isn't there - often many games don't like having a hard disk connected.

Protar can be contacted on 0923 541333. ■



You'll just lap this one up!

Amstrad is launching two upgraded versions of its ALT laptop PCs. It is also cutting the price of the existing models.

The new machines will be on sale as you read this in the following configurations: ALT 286 with 40MB hard drive at a price of £1,879.82. The ALT 386/48 with 2MB of RAM and an 80MB hard disk which costs £2,348.82.

Price cuts for the older versions are as follows: the 40MB hard drive 386/80 falls from £2,248.82 to £1,996.32, while the 20MB 286 drops from £1,879.82 to £1,526.32. ■

Express exclusive – Amstrad's new launches expected in September

THE PCW IS REBORN

Amstrad is to launch two new PCWs, the 9512 Plus and the 9256. It is also to kill off the 8000 range of machines, the 8256 and 8512. Express can exclusively reveal.

3.5-INCH DRIVES

Although few details are available as yet, a spokesman for Amstrad's public relations company, Michael Joyce Associates told Express: "The new machines will be the 9512 Plus and the 9256. The main changes to the range will be that the 3.5-inch drives will be dropped in favour of Sony standard 3.5-inch drives manufactured by Citizen. There will also be a new styling".

While final release dates for the machines have not been confirmed, it is expected that the Business Computing '91 exhibition in September will be the venue for the launch.

ONE ALREADY SIGHTED

It is known the machines are well past the development stages, and are already in production awaiting final shipment end of 1991. One development machine has already been seen in the UK.

The main change to the PCW, the

addition of 3.5-inch disk drives, is not unexpected. The 3.5-inch drives used in the older PCW, and also used in the Amstrad CPC and Spectrum ranges, have been in short supply for well over a year. Far Eastern manufacturers have turned production lines over to the 3.5-inch versions which are commonly used in PCs, Macs, STs and Amigas.

CP/M RETAINED

In terms of software support, the choice between CP/M operating system, seen by most people in the industry as archaic, has been left to the user in its latest version. This version is able to support both the new floppies, and hard drives.

Process for the new machines have not, as yet, been confirmed.

Bundled software, according to the spokesman, "... will be Locomotive which will be loaded from disk".

YES, WE HAVE NO COMMENT

Locomotive Software's technical director, Richard Clayton, offered a strong "No comment" on the possibility of a Locomotive/Amstrad collaboration on the new machines. "... we will be Locomotive which will be loaded from disk".

Detailed: the new PCWs

Although both Amstrad and its press and public relations company were reticent about commenting definitively on the exact specifications of the new PCWs, we have been able to work down the basic details which are as follows:

- Two new machines – the 9512 Plus and the 9256.
- Both machines will have space for two 720K 3.5-inch drives produced by Citizen.
- The 9512 Plus will come with a parallel/Centronics interface to take an as yet unnamed "capture printer".
- The 9256 will have a custom interface to take an as yet unnamed "capture printer".
- Both machines with paper-slide screens.
- Both machines will run Digital Research CP/M operating system. However this will be configured to a new version which might mean that programs such as Mini Office Professional will not run in its present state.
- The version of the CP/M operating system adopted for the new PCWs supports both the 3.5 and 5.25-inch drive configurations and hard drives.

then we would not be able to comment," he explained.

A spokesman for Michael Joyce Associates said: "The decision as to when to launch the machines has not been made. And, although this is unconfirmed, post September looks likely".

IT'S GOODBYE TO THE 8000S

So what is there in terms of the future, or lack of it, for the 8256 and 8512 PCWs? The spokesman for Michael Joyce Associates told Express:

"It looks as if the 8000 series is being dropped". ■

From PCW to PC and back again

Not only has the news broken that two new PCWs are on the way, both with 3.5-inch drives, but co-incidentally, it has been announced that Locomotive has upgraded its Locomote software.

Locomote enables users of PCs and PCWs to transfer text files between their respective machines.

In the case of Locomote, this means that you can retain the formatting codes, such as titles

and emboldening, so laboriously placed in the text.

The new bundle comes with "disk management" software and a cable which fits into the PCW's expansion slot and the PC's printer port.

When both machines are connected via the cable each can see the other as a disk drive and thus transfer the data.

Price is £29.95, or £34.95 for an upgrade.

Locomotive Software is on 0306 740866. ■

Sound investment

While most people think the Amiga's sound capabilities are already very good, they can be improved even further with Omega Projects' Sound Enhancer.

The Sound Enhancer is a hardware add-on that uses a filtering system to boost the Amiga sound chip's high frequencies, bypassing the low-pass filter which is fitted as standard to all Amigas.

The result, as users of sound quality, is a flat frequency response between 8 and 20kHz which, the company claims, improves all types of Amiga music.

Omega Projects demonstrated a prototype of the Sound Enhancer at the 16-Bit Show, and it is now available commercially for £14.95.

To get further details call Omega Projects on 0306 740846. ■



It's cool for DATs

It just won't lay down and die! Sony's Digital Audio Tape (DAT) has found a new incarnation in the form of DDS (Digital Data Storage).

DAT cartridges now come in two formats: 2 gigabytes worth of data storage on 90 metres of tape, or 1.3GBs worth on 60 metres. The carts don't need to be formatted and are supported by Macintosh, Sun, VME, and CEC among others. For more information call Sony on 0784 457000. ■

NIBBLES

Scan with your Arc

BT Software has packaged two Epson flatbed scanners for use with the Archimedes.

The two scanners are Epson's GT-4000 and GT-5000 which come with custom high-speed parallel interfaces. The GT-4000 can scan up to 480 dpi per inch (A4) and costs £1,259, while the GT-5000 can scan at 600 dpi and is £1,899.

BT Software can be reached on 0803 041099.

New Archie ranges

Computer manufacturer Archie has launched two new product ranges.

The Windows Power Series is a range of 3800SX and 3800SX machines specifically designed to run Microsoft Windows. And the other new range, the Archie Si Series, consists of 286 and 386DX models which include a single 3.5-inch drive, 1MB of RAM and VGA graphics.

For more info, call Archie on: 0802 862700.

Microsoft books

Microsoft Press has announced five titles, all based upon the latest version of MS-DOS, version 5.0.

The books are: Running MS-DOS; Running MS-DOS QBASIC; MS-DOS QBASIC Programming Reference; MS-DOS Quick Reference; and MS-DOS Batch File Quick Reference.

To get more information, contact Microsoft on 0734 381123.

Mac-in-DOS

A new version of Mac-in-DOS, the program that transfers data between the Macintosh and PC, has been released by Pacific Micro in the US.

It can now run under Windows 3.0 and, claims the company, is able to format Mac disks in a PC drive. Text, binary and graphics files can also be exchanged between the two formats.

Pacific Micro can be reached on 0101 415-948-6200.

A million in 3D

Damash has announced that 3D Construction 3D has broken the £1 million mark.

This figure is based on retail sales of the product in both the UK and Europe. The Commandos 3D version, which was launched at the end of July, does not figure in the amount, and the company expects sales of the product on this machine will further increase the sum.

Damash can be called on 080-780-2222.

Offenders named in Parliament

In his seventh annual report to Parliament, the data protection registrar, Eric Howe, has named companies which have been prosecuted for contravention of the Data Protection Act 1984.

Mr Howe said: "I gave fair warning that I would begin naming organisations who were prosecuted. During the 12 months to 31 May 1991 covered in the report, 17 organisations were taken to court and all but three were found guilty. Indeed, surprisingly, well-known names are among the offenders and publishing these should encourage others to ensure conformance with the requirements of the Act".

The organisations included Levi Strauss (UK) Ltd, the Church of Scientology, The Spectator (1982) and Leicester City Council.

The Football Association was also taken

to court but the jury gave it a conditional discharge for two years. The Halifax Building Society was also investigated, but the jury was directed by the judge to acquit.

Also mentioned in the report is the concern of the registrar about the security and confidentiality of individual health records as they pass through the massive National Health Service computer system.

Howe was scathing about the state of the health system's computer policy. "The department of health has not supported a statutory strengthening of the data protection principles in respect of medical confidentiality," he said.

However, he continued, in more optimistic vein: "The department of health is working on draft non-statutory guidance. My staff are already contributing to a Council of



• Data protection registrar Eric Howe's report to Parliament was scathing about lapses in the security and confidentiality of the national health system's computer records.

European working party, which is considering appropriate safeguards for personal health information".

Novell repels takeover bid by joining Digital Research

MERGER MANIA FOR PC MARKET

The PC market is going merger mad. This week's corporate confluence involves Novell and Digital Research (DR).

DR, responsible for the first personal computer operating system standard, CP/M, and also for DR DOS, is to be under threat from a takeover bid from software giant Microsoft.

Although the deal has been agreed in principle by both boards of directors, the final details have to be agreed by Digital Research shareholders. Once this has been approved, it is expected that the conclusive agreement will be signed in October.

In the event that DR shareholders oppose the bid, the company has promised to pay Novell an undisclosed sum in compensation.

Novell, which is the market-leader in the production of Local Area Networking (LAN) equipment, is rumoured to be under threat from a takeover bid from software giant Microsoft.

Novell has been selling great swathes of DR's DOS capabilities, in a press release, to announce the deal, as chief executive proclaimed: "Novell is welcoming a talented organisation with leading-edge leadership not only in DOS products, but also forward



• The PC market is subject to more Takeovers than the India 500 at the moment. Last week it was Borland and Ashton Tate, this week, it's Novell and Digital Research.

looking expertise in multitasking and graphical user interface technology."

The deal that Digital Research could mean that Novell has some insurance against any hostile

bids from Microsoft. The reason for this is that Novell will hold an IBM compatible operating system in the form of DR DOS, which currently has an estimated 15 per cent of the market.

Wanted: Sam Coupé demos

It is not just Amiga owners who get the chance to enter high-profile competitions for graphics and sound productions. Now users of the Sam Coupé have a chance to show off their prowess.

Chezware Software, which publishes the Outset disk magazine (see the Spectrum magazine specific column on page 20 for more info), is offering £100 for the best graphics and/or sound pieces in a Sam-related challenge.

Chezware is offering 10 prizes for each demo published and the first prize will go to the demo the editors of Outset like best.



• Not just the sun old story, 8-bit owners can win bags of cash prizes in a Sun-related challenge.

Send your entries to: Chezware Software, 605 Longborough Road, Bristol, Gloucester GL4 4NU. ■

It's just a token

Rikergton Communication Systems claims that it will take only four minutes to install and set up its Model 1103 Token Ring network adapter card in a PC.

The card is suitable for 4Mbps or 16Mbps per second Token Ring networking, complying with the IEEE 802.3 and 802.5 standards.

The adapter card comes with software that configures it to suit the specifications of the computer



it is used on. According to the company, the size and low power consumption of the card enable it to be used in laptops as well as desktop PCs. The Model 1103 is available now for around £495. For more information, call Rikergton on 0749 568224. ■

Games houses and distributors blame each other

8-BIT SOFTWARE PRICES TO RISE

Owners of 8-bit machines beware, the minimum price for budget games is set to become £3.99 across the board this month.

Confusion reigns over the reasons for this, with software houses blaming retailers and distributors, and vice versa.

To add to the muddle of opinion, independent dealers are unhappy with the possible rise and are apparently pressuring the software houses into returning the £1.99 and £2.99 prices currently available.

The public, who may now have to pay more for their software, won't benefit from the increase – in fact things could get worse. As far as original produced software is concerned, co-founder of Code Masters, Richard Darling believes: "There will be less opportunities for try-

ing original and off the wall games. For example, we would be more inclined to try Rock Star Are My Hostess at £3.99".

Virgin Games marketing director, Andy Wright, concurs: "Developing original stuff is no longer possible. It is now a re-

lease market".

Julian Jones, a spokesman for Players, responsible for such games as Prison Riot, believes: "The distributors are trying to push old stuff on to the public. We have got to do what the distributors want to do. Distributors call the line and there is no way you can break that barrier between the software company and the public domain".

A spokeswoman for John Michaels, however, takes the opposite view: "From now all 8-bit budget software will be on sale for £3.99 unless pre-priced". Most software companies are recommending the £3.99 price.

Mike Smith is more radical still. He has started an industry press that will sell all 8-bit budget games at £3.99, regardless of the recommended retail price from the manufacturer. Another



* Will they still produce games like Shinobi when the prices go up?



* There will be less opportunities for trying original and off the wall games," says Richard Darling, chairman of Code Masters.

major outlet, Boots, has decided to stock only £3.99 games.

Do you have any views on the possible rise in prices? If so, send your views by writing to No Budget Price Rises, New Computer Express, 30 Monmouth Street, Bath BA1 2BW. In



* Games of fun with a compilation label called Addicted to Fun. The first double-sided title sees Bob and Bob returning to the shelves.

Just say no?

Grease is to launch a new games label to deal with compilations.

Called Addicted to Fun, the first release under its wings will comprise Rainbow Islands, New Zealand Story, and Bubble Bobble, all of which received critical acclaim on their original releases. The compilation will be called The Rainbow Collection and will cost £10.99 for the ST and Amiga, £9.99 for the C64, CPC, and Spectrum.

According to Grease, more Addicted to Fun packages will follow, and they will all be themed. ■

Rhapsody II in blue

Archimedes owners with a musical bent may be pleased to know that Rhapsody X, the latest version of the Rhapsody music program, is now available.

It has several new features, including MIDI thru, and beat facilities and support for up to 64 MIDI channels, as well as upgraded editing tools. Formalized scores can be exported to ScoreDraw for improved print quality. ScoreDraw will be available later in the year. Rhapsody II is available now from Clares for £61.95. Owners of the first version can upgrade for £15.50. To find out more, call 0808 485111. ■

Deus ex machina

Amiga owners looking for enlightenment can now turn to Neuralink's *Content Bible*, which has recently been reduced in price.

The Bible has been reduced from \$12.25 (£7.75) to \$5.00 (£3.00). In terms of the Good Book to move on, it comes on a total of 17 disks, but can be installed on a hard disk to avoid a lot of disk swapping.

One version of the comprehensive Bible combines with Zorkker, a reported program, which costs \$100 (£60.61). This makes *Content Bible* accessible to Bible study classes as words and verses can be found and cross-referenced with ease.

Content Bible is only available from Neuralink in Texas, USA. It can be contacted on 0301-806-7930/4283. ■

Objects to open Windows

March Systems has released Advanced Easy Windows, a development tool for the Windows graphic user interface (GUI). The new program is an extension of the Easy Windows object oriented programming tool, and includes several additional features.

The package is designed for producing Windows applications and enables applications to be designed and modified, so the company claims, without the need for learning a new programming language.



It consists of several different 'models', including file management, a library of programming 'objects', standard query language (SQL) database, and an 'interface' feature which can import features from other files created by the package.

Advanced Easy Windows can run on any PC running Windows and costs £199.

Owners of Easy Windows can upgrade to the advanced version for £59. For more information, call March Systems on 0734 404079. ■

* Windows users who want to program applications can now use Advanced Easy Windows, an object oriented development tool and an extension of Easy Windows.

Animated antics

JCL has released Animate, an upgrade for its ColourPic and SuperPic video digitisers that lets users dabble in the art of animation.

Animate is a combined RAM expansion card, time marker and supporting software that enables the digitiser to produce animations that take up a quarter of the Amiga's screen. These can be arranged from images taken from sources such as a video camera or VCR video cassette recorder.

Recordings can be made in real-time, or if the images are to be used as individual frames, in single steps. The time marker enables short sequences of images to be joined together to create longer productions.

All the images are stored in Animate's own RAM, and once seen by the user they can be converted to PIF files to be used in other packages. The RAM also means that digitised still images can be made in both over-scan and interlaced graphics modes, which offer better resolution and colours.

Animate is available as an upgrade for Amiga users who already own a JCL digitiser at a cost of £150. Alternatively, can be bought ready-made to either the ColourPic or SuperPic digitisers, for £349 and £449 respectively.

JCL is on 08192 757191. ■

You can ring my bell...

The Co-Access voice mail system from Boston Technologies is utilising any other voice mail system in existence. It is designed to handle a large number of calls and any incoming line from any subscriber.

Other voice mail systems are limited in that they have only a certain number of call-processing processors, and if the lines are busy no processor is tied up. Thus the caller usually cannot leave a message.

One of the features in the recently patented system is digital switching. The system is controlled by a central computer which maintains a network of smaller processing computers which can in turn both store and retrieve telephone messages.

Voice mail systems such as these are sold in the US mainly to telephone companies.

Call Boston Technologies at 010-6172-469000, in

Network chips in

The first single-chip Ethernet network controller, named the ST-MAC, has been released by National Semiconductor. While these chips were mentioned before, the network interface controller, encoder/decoder and the terminal concentrator are now the trio, along with a number of the additional power.

TOMORROW'S CUTTING EDGE

Technology is forever moving ahead in leaps and bounds. How can we keep up with it all? Easy – read this page

Disk-cover the world

How you can forget flicking through travel brochures is plan your Staniside travel. Travel writer Lee Foster has combined forces with Boston Documentation Design to produce the first travel guide on a disk, for the PC.

The advantages of doing this are numerous. By the time travel information gets published it is often out of date. Now, updating this information is as easy as changing data on a floppy disk, so, in theory, the latest information should always be available.

Also, computer disks are comparatively smaller than travel books to carry around and store, and if information is required on paper, it can be printed out.

Currently there are five disks available in the range. They are called, San Francisco, Silicon Valley, California Travel, more



general guide to the Golden State, Western US Travel Sampler US and Travel Sampler Worldwide. They each retail for \$35.95 (UK £21).

All the information is text-only at the moment but methods of adding photographs are being looked into. The text information

is accessible through a Hyperstyle program which can cross-reference and display the different information.

Once pictures are added, and other places are covered, it won't be long before this is no longer overflowing with unwanted 13-30 Holiday brochures. In

Time for the transputer?

Many large US computer companies, including Cray, IBM and Intel are predicting that 1993 will be the year of the transputer supercomputer. However, Parsytec, a German company, expects to produce such a machine much sooner.

The supercomputer is capable of processing at speeds of up to a teraflop (one million million instructions per second). Parsytec claims that its Grand Challenge computer, which is capable of processing text as fast, will be ready by 1993.

The machine will be based on the T-9000 transputer-based processor which can be connected in parallel to each other in large numbers. And as more of them are added, the processing power is proportionally increased.

The Grand Challenge computer is expected to have 65,000 such processors.

The claims made by the German company seem a little far-fetched, since as at the moment, a production version of the T-9000 processor has not yet been demonstrated. And the Grand Challenge is still on the drawing board.

The machine is not being regarded as mere vapourware though, the company has already sold six similar computers in a similar design which use only 64 processors. In

Who's a pretty polychrome?

Computer users are using colour more and more often, but to get this colour from the monitor screen to paper has long been a problem. Until now...

Colour dot matrix and laser printers are fine for getting out polychrome images on to hard copy, but for services, genuinely photographic printing, there hasn't been any suitable technology around.

Now a new technology has been developed which scientists believe will offer huge improvements on the printing technologies available today.



* Currently colour ink jet printers such as Sharp's JX-739 are one of the best ways of getting fast, reasonable colour output, but they could soon be superseded by new Japanese-developed colour printing technology.

and it is predicted that it will be ready for mass production in a couple of years.

The new technology has been developed by five scientists at the Nippon Telegraph and Telephone (NTT) company in Japan.

Besides colour printers, the technology lends itself to colour photocopies and fax machines. The photocaster is expected to sell for a quarter of the price of current colour photocasters. The colour fax-machine would be able to send a full-colour photograph about 13 times as fast and ten times as clearly as the machines now on the market.

Colour images have been considerably improved by the new method. While its resolution is currently only 200 dots per inch (dpi), which is less than a standard laser printer, the new technology (as yet unnamed) can print each dot in almost 17 million different shades and intensities.

All the information would take up a lot of memory, but the Japanese scientists have worked out a way to compress the data so as to be able to send it at roughly a page a minute across digital telephone lines.

Apart from the fact that the system is only in its infancy, there are a couple of other drawbacks to it. Firstly, it uses liquid toner unlike the conventional ink jet current photocasters use, which could make changing toner cartridges messy. And secondly, the new process can only print on to a special type of paper. At the moment it is not known whether it will eventually be able to print on normal photographic paper. ■

Power of the written word

Are the days of the cumbersome keyboard, and the mouseless mouse numbered? Apparently so, as personal computing is becoming increasingly accepted.

This state of affairs has yet again been affirmed by the fact that another company has announced its intention to support a pen-based operating system.

Software Publishing is planning to develop applications for Go Computer's PenPoint operating system (V1.0) (see Express 129 for more information). PenPoint enables data to be input by writing with an electronic 'pen' on a touch sensitive monitor screen. It is designed to interpret the user's handwriting, in order to turn common scribble into control codes.



that the computer understands.

The company has adopted the O/S because it feels that PenPoint uses memory more efficiently than conventional desktop systems.

Professional Writer Plus, the company's pen-compatible document processor runs without modification under the new PenWindows extension to Microsoft's Windows graphic user interface (GUI).

Software Publishing is looking into making enhancements to its other products to run under PenWindows as well as Go's PenPoint. As more and more software companies adapt pen-based operating systems, it shouldn't be long before the hardware manufacturers do the same. ■

* Back to the future - will we be handwriting our input into machines like the RICOH 2125 instead of typing it in?

CITIZEN PRINTERS



144 CPS DRAFT 9 PIN



CITIZEN 120D+
The Citizen 120D+ is one of the UK's best selling printers. It has a sleek appearance and excellent features and performance for such an inexpensive printer. It can print up to 144 cps in draft or provide impressive text at an ideal four lines.

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NRP £224.95
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TOWER RRP £209.95
SPECIAL OFFER £172.95
SILICA PRICE £171.55

£129

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CITIZEN 124D
This compact Citizen 124D brings high quality 24-pin dot matrix printing within your home or office. It is the ideal choice where high quality printing is required at a budget price.

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DISCOUNT RRP £239.95
TOWER RRP £239.95
SPECIAL OFFER £179.95
SILICA PRICE £178.95

£179

192 CPS DRAFT 9 PIN



SWIFT 9 - COLOUR!
The Citizen Swift 9 is perfect for those who require colour printing at a budget price. It offers the same high quality as other manufacturers' 24-pin models.

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- 24 LQ Fonts (48kpel)
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- 8k Buffer
- IBM & NEC Pin+ Emulation
- Advanced Paper Parking
- FREE! Starter Kit
- FREE! Colour Kit

NRP £366.95
DISCOUNT RRP £349.95
TOWER RRP £349.95
SPECIAL OFFER £189.95
SILICA PRICE £188.95

£189

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SWIFT 24 - COLOUR!
The Citizen Swift 24 is one of the UK's best selling colour printers. It offers the same high quality black or colour printing, making it a popular choice.

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- 8k Buffer
- IBM & NEC Pin+ Emulation
- Advanced Paper Parking
- FREE! Starter Kit
- FREE! Colour Kit

NRP £416.95
DISCOUNT RRP £399.95
TOWER RRP £399.95
SPECIAL OFFER £259.95
SILICA PRICE £258.95

£259

PRINTER ACCESSORIES



SHEET FEEDERS

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RIB 3200 1240/1245 Black £14.70
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STOURBRIDGE SHOP: Stourbridge Business Park, Stourbridge, DY8 1JZ Tel: 0343-700 0000
EDINBURGH SHOP: 1-4 The Mews, Hatherley Rd, Silcock, Karsl, DA14 4DE Tel: 081-362 8815
TELEPHONE NUMBER: 0891-55-14-1400

To Silica Systems, Dovedale, 0891-55-14-1400, 1-4 The Mews, Hatherley Rd, Silcock, Karsl, DA14 4DE
PLEASE SEND CITIZEN PRINTER INFORMATION

Mr/Mrs/Ms Initials: Surname:

Address:

Postcode:

Tel. Home:

Tel. Work:

Company Name (if applicable):

Which computer(s), if any, do you own?

Minimum price and maximum age stated. Please quote ref. 411 0000 for the latest information.

Dinky dual drive

PRODUCT: Combined 3.5/5.25 inch floppy drive

NAME: All Media Floppy

COMPATIBILITY: PC

Fitting into the space of a normal half-height drive, Data Peripherals' All Media Floppy can take both 3.5 and 5.25-inch disk drives.

It is compatible with the existing disk formats such as the 720K and 1.44MB 3.5-inch, and 360K and 1.2MB 5.25-inch disks. The drive comes with a standard floppy drive interface for the PC with a single data connector.

Instead of using the disk eject lever which is common to 5.25-inch drives, the All Media Floppy uses a push button for ejecting disks - seen in all good 3.5-inch versions.

All present the drive is only available in bulk quantities to dealers and manufacturers. However, once it filters down through the distribution channels it should become commonly available so all PC users will be able to get hold of them.

Price: £39.70 for £1, £104 each per 100; £187 each over 1,000; dealer prices only.

Availability: Only through dealers

Target users: Computer manufacturers and individual PC users

Contact: Data Peripherals, 0785 57050

Perceived competition: The company believes there is no competition; the product is unique.



* Floppy drives can still surprise. Take this little baby which manages to save space and still look good. What could it do for you?

Share your server

PRODUCT: File server software
NAME: DataClub 2.0

COMPATIBILITY: Macintosh

Gomark has released version 2.0 of International Business Software's DataClub file server software for the Mac. The company claims it will improve performance by more than 500 per cent.

DataClub 2.0 runs System 6 and the Mac's latest operating system (0.9/0.7). Ce System 7 also supports the new OS/9's features such as balloon Help and the TrueType font standard.

The product's 'Virtual Server' feature lets machines on a network share resources such as disk storage and server processing, and access them through a single icon on each machine. Not only can files be accessed in this way but it also makes backing up easier.

DataClub's 'locked' feature has also been improved to prevent certain folders from being opened by other Macintoshes on the network.

Price: £1.99 for three user

WHAT'S NEW

From disk drives to plotters they're all here in fact filled details

Moveable media mechanism

PRODUCT: Bernoulli removable disk storage

NAME: Bernoulli 98 drive

COMPATIBILITY: PC, Mac

Iomega claims that its Bernoulli 98 is the first 90MB removable disk storage system for the PC and Macintosh. The drive is based on the company's Bernoulli mechanism which uses removable disk cartridges in much the same way that normal floppy disks are used.

Each disk can store up to 90MB of data, and the drive is also compatible with the older Bernoulli 44MB disk.

The Bernoulli 90's average access time is 27 milliseconds and it has a data transfer rate of up to 20Mbps per second. The drive also has a 52K cache memory to further speed up data transfer.

Handy for the less lucky (or more clumsy user) the hard disk has built-in protection against damage to the magnetic media which actually stores the data. If the Bernoulli 98 is dropped or has something dropped on it, the magnetic media inside bails away from the head. Theoretically at least, this saves the disk from any radical physical damage.

Price: Transportable £0.3380.42
Dual version: £194.83

version: £54.95 for ten user version

Availability: August 1991

Target users: Small businesses and sites that have from three sites upwards.

Contact: Gomark, 071-731 7930

Perceived competition: Personal File Share, TOPS



* Iomega's Bernoulli 98 drive lets you fit 90MB on a single disk, and also protects itself from shock events such as being dropped on the floor.

Removable disk: £197.28

Availability: None

Target users: "No one specific - up to dealers"

Contact: Iomega Corporation, 081-608 7171

Perceived competition: Other hard disk and removable disk manufacturers such as Syquest, Ricoh.



* Compaq's 240C is the company's first machine to use AMD's 40MHz processor which might come as a shock to its previous reputation, the mighty laptop.

Database discounts

PRODUCT: Database package

NAME: Delta Five Release 2.0

COMPATIBILITY: PC

Action Computer Supplies has put together a package that comprises Compaq's Delta Five Release 2.0 database and Delta Five Graph, a

presentation package, all for £426.

Normally, the database on its own costs £555, while the presentation package is £295.

Delta Five is a menu-driven database for the PC. It features 'form fit' techniques, supports networking and relational and translational file structures. The presentation package, Delta Five Graph, then creates the databases created with Delta Five in a number of ways, such as pie charts and bar graphs.

Price: £426
Availability: New (special offer until 30 September)

Target users: Any potential PC database user.

Contact: Action, 0800 333333

Perceived competition: Other databases such as Oracle and Paradox, which the company also stocks.

Compaq has released its first machine based on AMD's 40MHz 386 clone processor. Apart from offering the 40MHz processing speed, the machine comes with 8MB of RAM, 1.28MB of cache memory, 90MB hard disk drive and Super VGA colour graphics.

It comes in desktop or tower case configurations and has six expansion slots available. Two floppy drives are also included, a 3.5-inch and a 5.25-inch.

Price: £2,099

Availability: None

Target users: Corporate users, UNIX applications, file serving, CAD/CAM

Contact: Compaq, 0996 395533

Perceived competition: Any company offering a 40MHz machine and 486s.

Fun solutions get productive results

Computing isn't all fun. In fact, sometimes things can go drastically wrong.

To make these life-altering events a bit easier to manage, Accodina has produced 'Solutions to Office Problems', a brochure that uses cartoon illustrations to outline what can go wrong and what to do about it. These include such things as possible dangers from prolonged exposure to glare from PC screens, the effects printer noise and how to cope with limited work space.

This is not merely an act of charity however, as Accodina shows how its products can help solve the problems. The brochure also explains new EC directives on minimum health and safety standards for furniture and equipment in the workplace, and how to comply with them.



192 CPS DRAFT**9 PIN****SEIKOSHA SP-1900**

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- Parallel Centronics Interface
- Paper Parking As Standard
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STARTER KIT £25.00

TOTAL RP £240.00

SAVINGS £21.00

DRAKE PRICE £145.00

RP £125.00

£125

DRAKE PRICE £145.00

192 CPS DRAFT**9 PIN****240 CPS DRAFT****9 PIN****SEIKOSHA SP-2415**

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- 16 Colors Print Width
- 160x640 Print (1280x300)
- 48cps MLD (1280x300)
- Large 2K Buffer
- Parallel Printer & Centronics
- Graphics Resolution - 240x720dpi
- Parallel Centronics Interface
- Paper Parking As Standard
- FREE Starter Kit

RP

£230.00

STARTER KIT £25.00

TOTAL RP £255.00

SAVINGS £22.00

DRAKE PRICE £130.00

RP £130.00

£139

DRAKE PRICE £130.00

240 CPS DRAFT 24 PIN**144 CPS DRAFT 24 PIN****24 PIN****SEIKOSHA LT-20**

- 144cps Print Width
- 16 Colors Print Width
- 160x640 Print (1280x300)
- Large 2K Buffer
- Parallel Printer & Centronics
- Graphics Resolution - 360x360dpi
- Paper Parking As Standard
- FREE Starter Kit

RP

£395.00

STARTER KIT £25.00

TOTAL RP £420.00

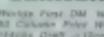
SAVINGS £21.00

DRAKE PRICE £210.00

RP £199.00

£199

DRAKE PRICE £210.00

SEIKOSHA SL-92**324 CPS DRAFT 24 PIN****24 PIN****SEIKOSHA SL-210**

- 324 Color Print Width
- 16 Colors Print Width
- 160x640 Print (1280x300)
- 50cps MLD (1280x300)
- 2K Color Buffer
- 24 Pin Printer & Parallel
- Graphics Resolution - 360x360dpi
- Paper Function Cards
- FREE Starter Kit

RP

£495.00

STARTER KIT £25.00

TOTAL RP £520.00

SAVINGS £21.00

DRAKE PRICE £260.00

RP £299

£299

DRAKE PRICE £260.00

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- 160x640 Print (1280x300)
- 50cps MLD (1280x300)
- 2K Color Buffer
- 24 Pin Printer & Parallel
- Graphics Resolution - 360x360dpi
- Paper Function Cards
- FREE Starter Kit

RP

£312.00

STARTER KIT £25.00

TOTAL RP £337.00

SAVINGS £21.00

DRAKE PRICE £168.00

£499

DRAKE PRICE £168.00

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CHURCH STRETCH 10 Church Stretches, London, W1A 1JL Tel: 071-588 1024

SHOPEX SHP 1-6 The Mount, Hitchin, Herts SG5 1EP Tel: 071-429 0224

MAIL ORDER 10-12 Highgate Hill, London, NW1 8QH Tel: 081-309 0011

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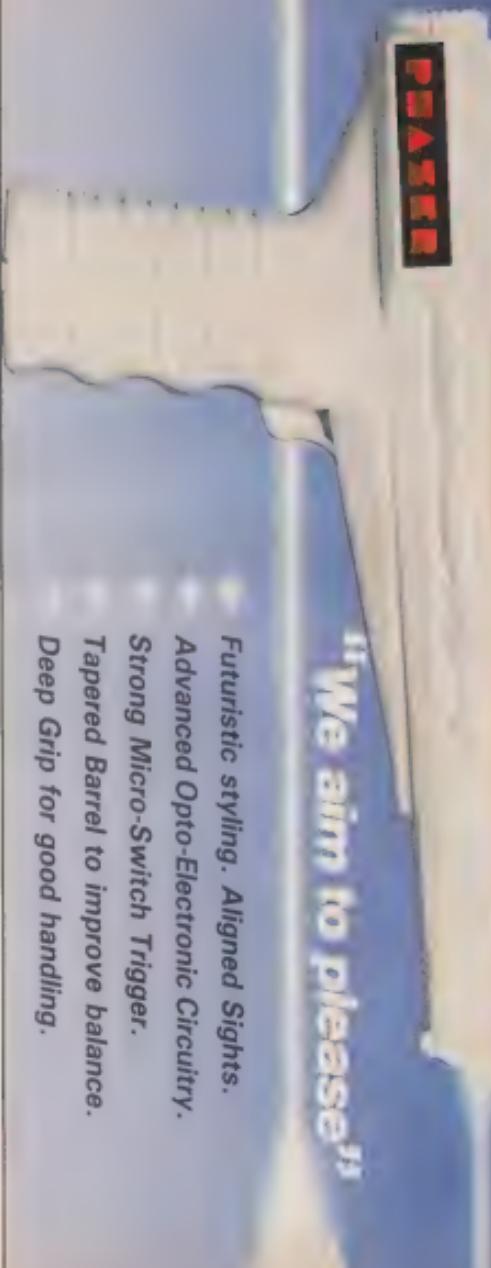
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EXPRESS MAIL

Welcome to letters pages that get you thinking.

This week, Haydn Fitz-Williams prints your points on the CDTV challenge to CDin, takes your tips on a new program for the ST and a Cyber/virtual-reality magazine feature and listens to advice on console costs. Plus your chance to put a question to top industry figures.



Format fight

In response to your response to Adrien Wright's letter in Express 138 not only is the David v Goliath debate a parallel, but also the forthcoming CDin v CDTV war could well be paralleled by the Betamax versus VHS battle. Everyone agreed that Betamax was better, but who won?

Even though CDTV is limited by the Amiga structure there are signs that CDin may be about £790 compared to the CDTV's expected price tag of around £450, which means that many people will go for the cheaper machine. The other big point in its favour is that CDTV will very probably appear in rental shops very soon (as did VHS).

I was amazed to read that Sam Tranel thinks Atari care just I quote, 'lose the Amiga away', one is very much under the impression

that Atari would have difficulty blowing a piece of paper away! I would be very much interested in seeing Sam Tranel substantiate these claims.

For those of you out there who don't have the lack to read Adrien Wright's letter I will inform you that it ran a survey. When the readers were asked 'Would you like to upgrade your Amiga system to run CDTV software?' over 100,000 people said 'yes', which could well mean over 100,000 potential CDTV buyers.

Readers should also note that Commodore is working on a CDTV drive for the Amiga (a CD can help SCSI) compared to a £999 disk.

My point is - no offence, but what sort of a name is Haydn Fitz-Williams? It sounds like a name a Lord would have and the chance [an Express Mail man being a lord in disguise] is 8 per cent.

P Young, Derbyshire

WHAT A PITY that such a balanced informative letter is spoilt by the thinly disguised star on a time name and lineage. The name is Welsh-Irish, the man is proto-Germanic and had you perused the appropriate journals you would see that the Fitz-Williams line does in fact have its roots firmly dug into the sharp end of over 40 generations of ancestors, inventors and champions of the advancement of science.

Who was quickly conclusive in quelling the Luddite rebellion? It surely wasn't some wee man from Derbyshire of the name Young. It was an F-W

Cyberman

Many months ago, I noticed in your fine magazine the name and address of a company producing a magazine called The Cyber Times. Sounds right up my street! I thought, so I sent them the £15 one year subscription fee and within a couple of weeks received the first issue.

Since that time I have heard nothing despite sending five letters (the last one demanding my money back immediately). What has happened to it? Maybe you or one of your readers know.

Since that time I have decided to get involved in starting my own Cyber/Virtual Reality magazine. As far as I know there is no other such publication in existence in the UK at the moment (I stand to

be corrected). So, for readers out there who'd like [I know more, drop me a line and I'll send some more details. And we'll be running off with your money after one issue].

OK, that's it for now. Thanks for making Thursday mornings so enjoyable. Over and out!

Alex Frischine, Brighton

WE DON'T KNOW where the Cyber Times crew is, but who's looking into it. Before we cost our million plus annual readers to the same fate that you've suffered in the hands of Cyber Times, we want to see examples of what you have on offer. If it makes the grade, we'll pass on your address to our readers. If it's low rated, we won't.



ST star program

I recently received my copy of The Chameleon a program written by a young German and in my opinion this is the best and most vital yet written for the ST.

What it does is to load itself as a desk accessory (DA) and you can then call up any DA at any time through the file selector. So in effect you could have a separate disk with 100 DAs and call any when needed and it only takes up 8K of memory.

Imagine what this means to the person who has an ST with the basic memory, no more worry over the six DA limit and how much memory is eaten up when they are resident. This is definitely the only desk accessory you'll ever, ever need.

This lad could have made a lot of money with this gen, but still can be yours for free by sending a blank disk and two international reply coupons (necessary for overseas), this is important. You must let the regular readers know about this immediately.

E Carnegie, Glasgow



Cover story catches someone's eye

The cover story of Express 141 on the screen price cut on the GX400s and the Amiga 1340s caught my eye. So I popped along to the nearest branch of Dixons hoping to pick up a GX400. Figuring that C18 was a reasonable price, even if all I ever did was play *Borneo Racer* on it.

Alas, no joy at Dixons. A small, but vital fact the article failed to mention was that about two months ago, Dixons slashed the prices of the two consoles to £29.95 and at that price had sold out of both consoles and cartridges weeks ago.

None of the Dixons' branches in Edinburgh had any in stock, nor could they order me one. One of the shop manager's phoned the head office to check whether any of the other stores

nearby had any, and discovered that the only store in Scotland with any GX400s in stock was in Aberdeen, 150 miles away!

For an item of such minute value and non-existent profit margin, Dixons weren't prepared to send one down to the Edinburgh store. Going to Aberdeen to pick one up would cost half as much again as the console.

So thanks for the interesting item - but next time - please try and give us the full story. In the meantime, if anyone knows where I can actually obtain a GX400s, they would might like to contact me via your pages.

Derek Richardson, Edinburgh

SO NEXT TIME we run a story based on truth, we must ring every store in the

country to find out which branch a good deal is available at? This is the real world. It was a real story. Drive's dip stash the GX4000 and it did rate as the bargain of the decade (if you aspired to the Amiga console).

Would you expect us to run several editions of the magazine with an update of how many GX4000s Dixons had sold? What happens if we ring up Dixons and they say: "Yes, it's available in Kirkcaldy" and we print that?

In the ensuing few days we'd check and print, the chances of Kirkcaldy may never what bargain is close to hand and buy them up, when you come marching over the Forth bridge with £20 in your hot and sweaty mitt, will you expect us to refund your bus fare? Well we won't...

BETTER THAN THAT, our regular readers who have chorused on this issue will be able to join the regulars in applying this little protago.

However, rather than give out someone's address to our readers, we've passed on the details to a couple of PDI traders so that they can put it in and thoroughly test it for bugs and full range compatibility before letting it loose on an unsuspecting public.

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AMIGA

- Silica takes on fastest Amiga accelerator card yet
- 26 colour VGA PC emulation comes to the Amiga
- Workbench 3.0 - read the details here!

SILICA SIZZLERS

If you thought Silica Systems does nothing more than sell Amigas, then think again. It is rapidly becoming one of the UK's most important retailers of Amiga products, ranging from memory to high-powered processor cards and graphics boards.

Its latest acquisition is the entire range of products from US-based Great Valley Products (GVP) to its Amiga. At the time of going to press, a few strings had still to be tied up, but Silica is confident that it will be able to offer UK Amiga users the entire range of GVP products by the time you read this.

Prominently distributed in this country by Rover Consulting, GVP produces a vast range of high-power expansion products ranging from hard disk controllers, to logic analysers and processor accelerators, including the Amiga's fastest accelerator yet, the GVP A3001 (sell 50MHz of it).

I was recently lucky enough to be able to have a play with a full-size A3001 16MHz, 8MB RAM, 32-bit VME which I quickly installed inside my Amiga 2000. What a difference it

made! With 30 MHz of processing power, my Amiga positively burned through applications. Comparing it to a standard Amiga to an Amiga equipped with an A3001 is like comparing a Sienna Cosworth to a Fiesta 1.1!

Ray tracing programs showed the most significant speed increase, but most other programs also benefited. In particular, AGS20's Art Department Professional was enhanced beyond belief. According to Silica, GVP has become the world's second largest manufacturer of add-on cards for the Amiga, second only to Commodore itself. It's not surprising either - every GVP product I have encountered has been streets ahead of the competition. They may be expensive, but buying GVP means that you get the best. Silca can be contacted at 081 309 1111.

ATONCE UPGRADE SOON

Stayng at Silica, plans are afoot to refresh its critically acclaimed ATOnce PC emulator for this Amiga. Although ATOnce was technically a very nice little product (I like it), it never really achieved the kind of mass market dominance that

Silica would have liked.

The company has now taken on many of the customers levitated at the original and it hopes to do the same majority of those return to the new release. Precise details are still to be finalised, but you can rest assured that Silica will keep us soon as I hear more.

Silica itself was keeping rather tight-lipped, but a source close to the company revealed to me that one feature that is being looked at is full 26-colour VGA support. We'll just have to see how it intends to achieve this using the Amiga's video hardware, but my source claims that some extra hardware will be built into the board itself which will work in conjunction with the new enhanced chipset.

What this basically means is that unless you're lucky enough to have an ECG-equipped Amiga (which rules out everyone but AGS20 owners who developed it), you won't be able to use this new model. It is also believed that the new ATOnce may not necessarily fit internally into the Amiga 500.

German developer Lutz is looking into the possibility of producing a version of ATOnce that plugs into the expansion slot on the Amiga 500. Obviously it will come with a parallel connector, therefore enabling those of you lucky enough to own a hard drive to use both products simultaneously.

Although multi-tasking was rather shaky as the final version of ATOnce, it will be refined in the upgrade. Phone Silca on 081 309 1111.

SNIPPETS

• Reminds are rife at the moment concerning a new release of the Amiga operating system. No, we're not talking Workbench 2.0 here - that's off the menu. We are in fact talking Workbench 3.0. Yes folks, the next major update of the software doesn't have a birth date yet.

Commodore is supposedly already working on the next major release. As always, getting information on the new version is like extracting blood from a stone, so we can only speculate on what the new Workbench will offer.

Bathin support. The Comptographic links system, which links the Amiga, is in support for both virtual Amiga (one year back) as well as DRAM and absolutely even 24-bit video (fourth three custom chips perhaps)? If you keep your fingers crossed, we'll let you know.

• No sooner has Eurosoft's AMOS 3D hit the shelves, but the company is already hard at work on an upgrade. According to Eurosoft Software, the developers of AMOS 3D, work has already started on the upgrade which will push the 3D system further. Details are rather sketchy, but Eurosoft claims that the upgrade will speed things up considerably and we'll allow for more complex objects to be created.

• Silca certainly doesn't mind about when it comes to new and upgraded products. Take out your wallet for Scale 2, an upgraded AGS20, and best of all Department Professional 2. The latter boasts many new features, including full support for the new Eaton AR colour scanner plus many new image

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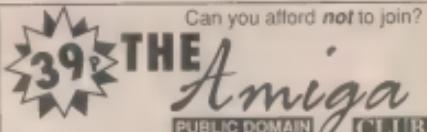
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PAGESTREAM & CALAMUS UNDER CHALLENGE

Adding weight to Alan's argument that the ST range is the ideal gear for desk top publishing, comes the announcement of a brand new program

called *Saxon Publisher*. This is being distributed by Surface UK and costs £199.95.

Saxon Publisher offers some extremely professional features which are going to seem very tempting to someone who's got a serious publishing job to do. Features such as:

Computer and PostScript support.
Postscript downloadable fonts are supported including Dosegraphic, Adobe, Times 1 and 2, Pagestream and Apple Computergraph. There are also custom editors to convert PostScript fonts to Saxon Publisher format.

IT'S JIMMY WHITE'S SNOOKER 'INNIT

Ahright, so snooker's one of those games it's hard to be ambivalent about you can either sit there for hours going to town at the players (or fail) control table or alternatively reach for the remote control and watch an interesting gardening program instead.

The game of snooker has now been brought to the ST, courtesy of Jimmy. This is a full simulation of the game, including computer controlled players and a full rulebook. The table is a fully

light shaded 3D creation which scrolls extremely smoothly around the screen.

To take a shot you need to move the table around the cue ball. This isn't as difficult as it sounds, a plethora of icons enable you to line up shots more precisely. Then when you're ready, you can chalk your cue (so, really), tilt the power and take the shot.

Side-spins and top-spins are both indicated on the icons bar, so you may need to get the cue ball in and out of it when you wanted it. Some excellent sound samples accompany the game, when you pocket a ball, or make a decent break for example.

One of the best (and most trivial) features occurs when you don't do anything for about ten seconds. A series of files descend on the table, or the balls stick the hangars out at you. It's brilliant fun and should be out on the single label within the next month.



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Apex colour separation, multi-page preview, Postscript screen preview, aligned tabs and metric and position-based are supported. One excellent feature is the ability to specify colours as being composed of differing percentages of yellow, cyan, magenta

and black, along with an ink intensity recognition function.

Contact Surface UK = 081 566 6677.

MASTER AT MATHS

Computerised boards are the sort of hardware that you can't really envisage a use for. That is until you start using a CAD package properly, or indeed any processor intensive program.

TC Developments has decided that there's plenty of ST owners out there, who'd love to free their CPU of intensive mathematical calculations and has released a 58881 board with a 2MHz clock speed.

In fact, this would mean that trigonometric and logarithmic functions can be performed about 3,000 per cent faster, so before you rush out and buy one, bear in mind that it isn't going to speed up your favourite load-up.

Certain packages already support co-processors such as the the ultra-expensive drawing package DrawCAD has the option built in. If you'd like to add these routines to a program yourself then TC developments can supply you with libraries for Passpro and HostC.

The board runs on all STs and doesn't require any soldering, it simply slots straight on to a socket located on year ST's main circuit board. The co-processor costs £189.95 + £C. Developments on 0237 561145.

Andy Hutchison

Andy Hutchison is the news editor on ST Format, out every month.

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PC

- From mouse to pen with PenDOS
- Borland bags Ashton Tate and dBase
- Pagemaker 4.0 book for beginners

NEWWAVE TOOLBOOK

Asymetrix has announced that it will extend its ToolBook application development product for Windows 3.0 into the HP Newwave Desktop. This will mean that ToolBook for Newwave will allow you to construct fully Newwave-aware applications.

Both products' script languages will be included in the new ToolBook 5.

HAMMY SHAREWARE FOR SATELLITE SPOTTING

It's the final part of the HAM Radio Getting Started series but 2.1 is going out with a bang thanks to a couple of excellent programs. In her week's time a new shareware subject will raise its slender head - not adventurism.

First out of the bag this week is PC-Trak 2.1, a wonderful program that provides an on-screen display of non-synchronous communications satellites. The class that orbits Earth the opposite way to which the planet is spinning in real time, using a Mercator world map.

It includes a satellite database of up to 350 entries with predicted positions,

OpenScript and Agent Task, so you will be able to record Agent tasks that include TaskBook books that will be able to invoke Agent tasks.

Scott Jones, the NewWave Product manager, said: "This is the first development system which allows users to develop fully aware HP Newwave applications quickly and easily, without using the Windows or HP Newwave user interface."

Both products' script languages will be included in the new ToolBook 5.

astronomical and elevation charts. It can also track the circular and elliptical orbits of satellites. Version 2.1 can track up to eight satellites simultaneously, and is 3-D to boot.

WORLD Partner Monitor 12.0 is a long-established and popular amateur program. It can run under DoubleOS or Desqview thus enabling multiple copies to be operated on multiple ports. All the required utilities are provided as are most of the popular TNCs. Contact PO Box 6 Showers Library, Wimblecombe House, Bassett Rd, Cirencester, Glos, GL7 1BL.
TE 01285 663298

software development kit."

TE: Hewlett-Packard or 0344 361263

PENDOS FOR NOTEBOOKS

Communication Intelligence has announced PenDOS, a sun-based operating environment that works with standard DOS applications on 386-based laptop computers.

PenDOS enables any incompatible DOS application to use pen input without requiring any extensive modification, according to Jim the Redwood Stores, California, company. The pen interface supports gesture commands and a writing workflow. As soon as I get a UK contact number I'll pass it on.

FOXPRO 2.0 ARRIVES

For Software of Toledo, Ohio, finally began shipping FoxPro 2.0, a DBASE-compatible database with greatly enhanced query performance and integrated SQL. FoxPro 2.0 costs \$795 for 500MB users and \$1,795 per server.

GRAB A WINDOW

With version 3.2 of InterMedia Inc's screen capture and image management software, Collage Plus, users can do some pretty cool things. With Windows 3.1, users can capture windows, take a specific region of a Windows screen, and save an image to the Windows clipboard.

Collage Plus retails for \$129. Upgrades are free if purchased after 1 July; before upgrades cost \$35.

TE: Contact InterMedia at the Station on 0101 603 465 3216.

DOS 5 CORNER

Having trouble with DOS 5 and OEM? Here's a typical problem. If you use OEM BUFFER to set the buffer size to the high memory you may get the message 'buffer requires DOS 2 or 3'. The answer is to use the SETENV command to set the driver loaded from the command 'SETENV BUFFER.DOS 3.0'. This won't take effect until the system is re-booted.

BORLAND TAKES OVER

Winfred Boyce actually did not report to Express last week. The company had acquired Ashton-Tate for more than \$440 million.

Boyce is currently the number three PC software developer behind Microsoft and Lotus. With the merger it now becomes a 5,500 million dollar company. Ashton-Tate will become a wholly-owned subsidiary of Borland, but the company will work, comment on details such as layoffs of Ashton-Tate employees or where the company is going, as it sees fit.

Everything goes smoothly. Borland also has gained a lot more muscle in foreign markets. More than 70 per cent of Ashton-Tate's revenues last year came from non-US markets. Borland also gains a network of reseller partners in a host of well-known products, including Applause, Multimate, and Frameworks.

But the real benefit to Borland is

Continued on next page >

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► Above: the program, the language and the huge installed base of users.

The acquisition ends several difficult years for Ashton-Tate.

BOOK OF THE MONTH

PageMaker 4.0 is a perfectly splendid DTP program from Aldus. However, it is rather large with a vast array of features. Thus, about 16 million bytes seem to have been written for it.

I recently received Kumar's effort:

- *PageMaster 4.0 for Windows* by William B Sanders. This book is aimed more towards the beginner. As such it is nice to see hints and tips on Windows 3.0. I'm sure many *PageMaker* users will purchase *Windows 3.0* just so that they can run *PageMaker 4.0*.

The book methodically explores each feature while highlighting various 4.0 improvements and solutions. Illustrations are scattered throughout. No real focus is given for the likes of Postscript, Pantone, and other technicalities although they are briefly mentioned. However, given the target audience these factors are of no great concern.

Spanning 792 pages printed on relatively low quality paper which keeps the price down and costing £19.99, *PageMaster 4.0 for Windows* can be heartily recommended for any *PageMaker 4.0* novice. Available in the UK via bookshops, computer stores or from Computer Manuals.

Tel: 081 708 6000

Paul Rigby

SPECTRUM

- Budget bargain! Four games for £2.99
- Electronic magazine Outlet carries on brilliantly
- Give Dizzy a good poke and make him immortal

4 FOR £3

The Spectrum software scene is well stocked with bargain buys. At the moment, as midde-aged classics are re-released for a new audiophile budget, games are better than ever and ground breaking stuff like the 3D Construction Kit sit together on the shop shelves.

But, foremost, in the value stakes and most worthy of a long red banner across the front page are the budget Quattro compilations. Put together by Code Masters who else? these are four game packs based loosely around a common theme and priced at a mere £2.99.

Quattro Racers is one of the latest and offers good value for money and huge amounts of joystick juggling for a small outlay.

First up there's BMX Simulator 2, a simple yet oh so addictive Superstrip style overhead viewed race game with nice graphics like an action replay and simultaneous four player games! Graphics and sound belie its budget roots and the option to load harder courses means you could be playing this one for quite some time.

Mind you, you'll probably want to have a go at ATV Simulator before long. This is a seriously deep, side view race against the clock as you sit behind an All Terrain Vehicle and attempt to negotiate an end of obstacles. It's endowed with great animation and a fantastic amount of playability.

BMX Freestyle Simulator isn't quite as good and sales are more patchy. To be able to play with any kind of success as you try your hand at freestyle, junior, halfpipe, wheelchair and such like.

Finally there's Jet Bike Simulator which returns to the overhead race style format of BMX Sim as you speed around a harbour with various watery obstacles and lots of bugs to get round. The inclusion of a simultaneous two player contest is a bonus here.

For £2.99, Quattro Racers offers exemplary value for money and more wind playing through the hair racing action than you'll find racing elsewhere.

The communal nature of most of the games means fun for the family, or for less families of Spacely owing spaced freaks into BMXs at any rate.

ELECTRONIC ORGAN

With CDI and CDTM, interactive on-screen magazines could well be a huge entrepreneurial medium in a few years time. So let's not forget that early pioneer of the form, the *Dizzy* driven paper based organ for the Speccy!

A review of the 50th issue and with a birth date of 1979 has to be one of the earliest multimedia publications for any computer. And it's managed to maintain a very high standard for the two years I've been reading it. The two most recent issues, for June and July, both boast a nicely improved masthead to look like something which should interest anyone who doesn't use their Speccy and for games players.

Highlights of the June edition include extra BBC BASIC commands for the +2, an excellent version of life, the classic computing standard, a BMX to Spectrum via CD-Rom disk utility, a highway race car and a thoroughly exciting selection of 128K music.

The July issue is equally as impressive with a Spacecraft sound-light generator, a program called Big Tones that increases the Speccy's number handling capabilities considerably, some art, a nifty rotator that scrolls text across the top of the screen in the border, Rags - a weaving pattern generator and finally, Fast Rider, a super fast, very difficult, budget standard racing game with excellent sound FX. That's as well as screens full of letters, various software and hardware reviews, news, tips and classifieds all devoted to the worship of

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Dulfer is unconditionally recommended, encourages and thrives on readers' ideas and contributions and celebrates the Speccy every month for a reasonable price. Get hold of a copy from Chevron Software, 805 Loughborough Road, Beeston, Leicester LE4 4RA. It's available on every format known to man (cassette - £3, +3D, Disciple, Disc and SAM disk plus Microdrive cartridge) and your final issue only costs £2.99.

EASY PEASY

I like questions I can answer, so thanks to Ian Gittings of Celsoft for the following demand - "Where can I get a new power pack for my +2? The original one died suddenly and for no apparent reason recently."

Power supplies are easy to get hold of, whatever type of Speccy you've got; there's a space on your desk and a place in your heart. For 48K power packs try Bentley's (251 Newcastle Street, Burslem, Stoke-On-Trent, Staffs ST6 3QW) which advertises them for £19. +2 packs can be bought for £18 (plus £2.50 P&P) from SCS Components, 218 Portland Road, Hove, Sussex BN3 9QT. The same place also has +3 supplies for the same price.

One place I've tried before is Gemini Electronics, 23 Curzon Street, Derby DE1 2LS. Send an SAE or phone them on 0332 291219 for power unit prices. Hope that's sorted out.

Remember to tell them whether you're +2 or an original grey one or a shiny new +3A. If it's the latter you'll probably be alright with a +3 pack.

INFINITE DIZZY

We all know how popular Code Master's range of games featuring that lovable egg tyke character, Dizzy... and so I thought it might be a good idea to offer hacks for as many of the series as possible. Here then are Multiface hacks for the original Dizzy and the latest addition to the saga, Megastard Dizzy plus a routine for Dizzy's temporary type in the latest, save-a-for-Dizzy size, RLB and STAY item type from the beginning.

Unless you have a serious interest pathological hatred for the smug oaf at you're bound to love one of the three, so get cracking and make Dizzy immortal. Thanks once again to our old pal, Alan Johns, for the latter two hacks. 0622 352723, 352695, 0 - Whistle waves 592444, - Turbo speed 542160, - Immortal:

```
10 REM DIZZY 3
20 REM BY ALAN JONES (FQZ)
30 CLEAR 24319: TOR F=21298:T0
73325
40 READ A:POKE A,X:NEXT P
50 RANDOMIZE USR 23303
60 DATA 175,50,25,246,195,0,97
70 DATA 221,33,198,92,17,8,1
80 DATA 62,256,55,203,188,5,48,241
90 DATA 62,91,20,62,92,193,198,92
100 DATA 194,195,196,197,MURKIE
MAGICLAND DR7Y - 29622.0 - infides
```

Robin Albany

CPC

- Loriciels new game, *BuilderLand*, previewed
- Can you transfer programs to ROM?
- Should RBL2 have been a Speccy port?

BUILDERLAND

French software house Loriciels was at one time considering pulling out of the CPC market in the UK, but now there are at least two new games heading our way across the channel.

One of these is *BuilderLand*. Now it's rather difficult to describe the game. It's a bit like the 16-bit smash *Zomberman*, where you have to help thousands of the little creatures march safely in the face of a terrible

environment and their own innate stupidity.

In *BuilderLand* you're only trying to help one character, Mella - progress across the screen. It's a horizontal scroller and it moves with the pace of an antlike slug. In this case, though, it's a good thing, because that gives you more time to place blocks, viruses and other objects in his path to prevent him coming to a sticky end. It's tough, but it looks very good indeed.



BuilderLand is a horizontal scroller with a difference. Not much fast action, but lots of puzzles.

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DON'T DO AS I DO...

Here's a story with a moral. Once upon a time there was an editor who knew that the last thing he would tell people to do was fiddle with leads while they were connected to computers and peripherals. But this editor thought he knew better. We thought it wouldn't matter if he fiddled with the lead connecting his A64 with his Commodore 1200. And what happened? Guess! Blew the data thing up. The Commodore, that is, not the A64. I feel such a fool.

ROOM ON THE ROM?

Asian Workers of Amstrad has an interesting question about ROMs:

"I use Tuxedo, CP/M and I was wondering if it would be possible to transfer these programs to a ROM so that they could be plugged into a ROM board for easy access?" This is possible, what's the biggest program a ROM could hold, and how much would a ROM board and the drives to transfer the program cost?

Well the bad news, Asian, is that it's impossible to transfer the programs you refer to to ROM. Programs like this on ROM have to be specially written in assembly, since they use different areas of the machine's memory. You could do it with a CP/M board, since...

Graduate Software has developed a way of transferring it to ROM. You need to strip your CP/M monitor disk and a cheap £14.95, though. Graduate Software, 9-14 Formular Avenue, Weston on Trent, Derby DE7 2HL. You



* 202's graphics are colourful enough, but they're blocky too.

can also get the word processing program Protext for ROM too, and that's available for £25 from Amor Ltd, 441 Lincoln Road, Peterborough PE1 3HA.

You can get 16M on a single ROM chip, but larger programs can be accommodated simply by switching between ROMs. ROM drives cost around £25, but if you buy one from Amor at the same time as you're buying a Protext ROM it'll only cost you £20.

YOURS OUT!

£80 stands for Miles Battled X!, and it's the latest of Gemini's new baseball simulator. I took a look at the program on a Speccy (yeh!) a couple of weeks ago and it looked pretty good - I was rather looking forward to the Amstrad version after that.

The good news is that it's not a Speccy port. The bad news is that it

should have been! Unfortunately, the mode 0 graphics, although colourful, are blocky and confusing, so that a lot of the appeal of the game on the Spectrum has been lost.

But what about the gameplay? Well before you can actually lay bat 'em, you have to clear through some rather tedious options screens. Those out of the way, you get to pitch your first ball. Nothing to it - press F1 and then quickly move the stick according to what sort of spin you want to put on the ball. After that, it's up to the batter... the display changes if he hits the ball, and you see your fielders charging around the field in pursuit of it.

Your pitches are good enough to get past the batter three times, he's out. Get three batters out and it's your turn to go in there and try and slog the ball off the park.

This is fine but, catching the ball is simply a matter of hitting your strafe. The bat doesn't travel long distances, so if it's not efficient. That's the downside with ROMs, it's all a bit one-sided. Batter is easy and off-target fielding isn't. The graphics are colourful, but just too blocky, and the sound is nothing to write home about. At £10 or so a disappointment this one. Price: £10.99 cassette, £14.99 disk.

CHEATING TIME!

Ave Scott of Stratton has a cheat for the excellent budget game Bloody Dice and Scraps 900. You can infinite lives by getting to the options screen and then pressing the keys F1, F2, Q, C, and S simultaneously. The border should flash to show you that it's worked.

Meanwhile, Graham Smith from Street has a patch for Prison Riot which gives you strength, life and keys.

- 1 * Prison Riot '95 Graham Smith
- 2 * Infinite strength, time and keys
- 3 * Regs

59 BRTS 2a,39,08,22,8c,00,21,83

59 BRTS 60,22,05,09,01,35,7e,06

59 BRTS 52,34,06,3e,59,32,01,86

49 BRTS 41,32,1b,1c,58,3c,a1,11

59 BRTS 1,42,81,52,61,68,06,82

59 BRTS 34,41,61,64

59 PRIS 125 11 125:800 41

59 PRIS 125:800 41

59 PRIS 125:800 41

100 2f g3788 CALL 36-B0B

119 PRIS!data error

Rod Lawton

Rod Lawton is editor of Amstrad Action

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threatened by several evil tyrants and you must get no less than. Each level comprises of a horizontally scrolling section and there are a number of doorways which lead to vertically scrolling ducts. Alters set on the planet surface leave ARA currency behind, which can be used to buy extra weaponry in the shop. Planet Runners can also be pointed here and must be deposited at the bottom of each duct.

There is a huge array of extra weapons to buy, which can be clipped on to your suit. You also have a mighty power tool which can be upgraded as well. At the end of each level comes a massive central core which must be destroyed within an allotted time.

Hyperdrome is one of the best games for the C64 and ranks alongside AmigaLife for sheer alien ambience. Super graphics with loads of variety and mindboggling spaces to boot.

- Creatures - fast but not least, and not surprisingly the best-looking C64 game I've seen.

Cyberdrome - fast but not least, and not surprisingly the best-looking C64 game I've seen.

Our hero however has horizontally scrolling sections, tackling all manner of weird creatures. He has lots of weapons to use, not least his large flame breath. Midway through each



* Hyperdrome - one of the games on 'Galaxy' later compilation. Every game is original, aesthetically pleasing, and playable.

level, Clyde uses his friendly wits but to buy more weapons, and then it's on to the second part of the level. Each section has its own military-style mother-ship, but there is also a torture chamber. For each level there are 10 Clyde's charms being repeatedly tormented by some nasty pieces of work - it's up to you to save them!

The thought that has gone into Creatures is staggering. Statistically the tortuous chambers, the graphics are cute, extremely colourful and never fail to raise a smile. Sound is a rather odd mix of burly FX and some lively music. Amazingly original and great fun - it's a pity the game is only so months old.

The Hyperdrome is a compilation not to be missed. Out soon (£29.99) and disk (£29.99).

Andrew Roberts

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MACINTOSH

- Details leaked on Apple's new portable
- Bargain upgrade offer for WordPerfect users
- Aldus' new Freehand and Pagemaker combination

RUMOURS...

• After a hearing which took place on 8 July, Federal judge Vaughn Walker has declared that January 1992 will be the end of the 'discovery' period in the Apple Computer vs Microsoft and Hewlett-Packard case. This means that the way is open after this date for a full trial. If the parties have not settled before then.

After three years, it looks like the case is nearing its end. In the previous hearing - now Apple will have to prove to a jury that its claims against the other two companies that the Macintosh Windows and Hewlett-Packard NewWave GUI infringe on the copyright of the Mac interface, are valid.

Judge Walker could have dismissed the case at the hearing, as he described that a jury will not be able to decide if the software is infringing or not.

• According to online news service Msnetworks, Apple has announced that its new manufacturing plant in Fountain, Colorado will be used to manufacture its new portable Macintosh. This is a breakthrough in Apple's corporate communications - until now, Apple has

officially confirmed that a new portable is being developed. Indeed, the company has actually said that it hopes to introduce the new machine before the end of the year - informed sources suggest on 21 October.

On the same subject, an artist's impression of the new Macintosh Portable in American magazine MacNews has led to much speculation that the illustration was first of a speculative inscription and more of an accurate diagram. Slightly informed sources reckon that the diagram - which shows a Mac with a trackball situated centrally below the keyboard, rather than to one side like the current Portable - is as accurate that Apple in the US is hopping mad, trying to find out who leaked details.

It's unlikely that the source will be discovered, however, since prototypes of the new machine are thought to have been shipped to hundreds of developers over there. At the moment, though, it's thought that no-one on this side of the Atlantic has seen the new machine - and that includes staff at Apple's UK headquarters in Stockley Park.

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• Russian computer company Infocomm has recently announced that it is to be the first Apple-endorsed distributor of Macs in the USSR. Apple has confirmed that an agreement with a Soviet company is due soon, but has not yet provided many more details.

• Apple has announced PIM II has made a net loss of £21 million in the third financial quarter of this year. This is because it spent some £81.7 million on "restructuring, cost reduction and other activities that are now underway." Shipments of Macs increased by more than 60 per cent compared to the same period last year, and net revenues increased by 12 per cent. According to

John Sculley, Apple's chairman and chief executive officer, "during the quarter we took actions aimed at positioning Apple even more competitively for the future," and added that he is "committed to redesigning Apple's infrastructure and financial model so that they are both sustainable advantages within the industry."

PRODUCT NEWS

WordPerfect UK has announced a number of special offers to encourage people to buy its WordPerfect 2.0 word processor. Users of Microsoft Word need only pay £71 to upgrade to WordPerfect, while earlier users of

WordPerfect can upgrade to the new version 2.0 for only £51.

• Alert UK - creators of Freewheel and PageMaster - have launched a package called Nitro Creative, which is a combination of three best-selling programs. The package costs around £95 and includes a reader enabling newsletters to intend a one-day workshop to familiarise themselves with the programs.

• Mac programmers will benefit from having to wade through Inside Macintosh volumes I & V in order to find the exact syntax of some obscure ROM toolbox command. Can you buy an on-line reference tool to simplify things?

Syntactic, creator of Think C and THINK Pascal, has introduced a package called Think Reference, which collects the information from all five volumes of Inside Mac, including descriptions of Toolbox routines, programming tips and fragments of code. The program has cross-referencing facilities, and the data can be searched by name, keyword and structure, among other methods.

• As expected it will sell for roughly £1000 over VAT. It requires at least 1MB of RAM and around 3.5MB of hard disk space. You can contact Syntactic over here on 0588 776343.

• Those of you with loads of money and a Mac SE/20 or II can now buy an acceleration board which is claimed will increase the Mac's speed beyond the IBM and even Sun's SPARCstation.

Porter Data Systems claim that applications such as spreadsheets should run up to 200 per cent faster than the IBM, while graphics and DIP programs will run up to 185 per cent faster. The board, called the Tokatmac, is System Compatible, and should run with most Mac applications. It will cost \$2,995, plus \$50 for an 030 processor direct slot. Call him on the States on 010 1 212 331 5326.

• Heydon & Son has reduced prices on all monitors from 4 Machines. A 16-inch, full-page Sun Trinitron colour monitor now costs £1,795+VAT, with a standard 15-inch interface card for the Mac II family at £295+VAT and a 24-bit accelerated card £1,125+VAT. Heydon & Son is on 081 203 1173. Ian Whingley

POSTCARD FROM AMERICA

Sometimes a glorious event occurs that reassures one's faith in the innate stupidity of software users and developers. This happened with the shareware program, MacspiderZoo.

MacspiderZoo is an IBM ROM that reprograms a standard Mac II video card to display a 704 x 512 pixel screen, instead of the normal 640 x 480. It only works with 4-bit and 8-bit Apple video cards. This fantastic hack is by Rasto Hell of Bulgaria.

The program starts the monitor out at the smaller screen and then gently lures the restorer of the video signal. Other monitors, that aren't as sensitive as Apple's will just give a black screen to a MAX-produced signal.

There seemed to be plenty of interest in this hack. Who wouldn't want the additional screen real estate for a certain price? But perhaps not enough registrars were to satisfy the author. He waited in the last release (1.02) that "if I haven't received a reasonable feedback by then, I won't release an updated version."

Suddenly last June, the product stopped working—everywhere.

Herli had included a time bomb to bring everything to a MacspiderStop. This parasite checks information on the video board, which still it was located, and then terminates a date. Boom.

Moving the video board did make a difference. For each slot, the expiration date moved forward 17 days, 3 hours, 11 minutes, and 17 seconds (~7.5 seconds). Since the author refused to come forward with an update version, all kinds of patches and fixes appeared. Programs like Recharger changed the date before the ROM loaded, and then changed it back. This solution worked for some, but added yet another lot into over-packed systems.

Repair patches tried to prevent the Macspider from executing. They didn't stop MAC from checking the video slots, but redirected the result of the check. No matter what the result, the program loaded. Some idiot 40 programmers wrote custom wide-screen applications that required MacspiderToRun to operate. I could wait in the max on reliance on hacks.

David Wergstrom

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WHOLE WIRED WORLD

Cheaper phone charges for modern users courtesy of the EC; budget hard drives for the Amiga; dot matrix printer companies go into battle—all this and much more from Steve Gold our intrepid reporter on the wire.



EC PHONE PRICE CHECK

Calling all modern users with high phone bills—the European Commission has announced an investigation into whether EC telephone companies are overcharging for their international phone calls.

A preliminary inspection, the agency says, has indicated that alleged high charges for calls both within the EC and to other countries could be the result of anti-competitive arrangements.

EC Competition Commissioner Leon Brittan said that the commission has found evidence that consumers are paying too much for calls outside the EC in proportion to the costs of the services. He says they also pay two or three times as much for a call in another EC country as for one covering an equivalent distance within their own country.

"The decision to proceed with a formal investigation shows the commission's determination to ensure that consumers and business users benefit from maximum price transparency and full compliance with the competition rules," he said.

So who's likely to fall foul of the investigation? Reduced international call charges, that's what. Although this doesn't affect trunk calls directly, it's likely to put a lot pressure as BT to reduce them as well, or at least hold prices steady for a while.

US E-MAIL COMPANY LINK

An long time, it looks as though electronic mail services are getting their act together with directions. Three US E-mail companies in the US have agreed to link the user directory of their services

It looks as though another round of price cutting and new model releases are due on the dot matrix printer front.

Following hot on the heels of Epson's recent new printer releases at PC Expo in New York, Fujitsu has followed in with



Fujitsu dot matrix printers are being rivalled by Epson's recently released line of B3488-24-pin printers.

the DL3600, a 24-pin printer that retails for just \$949.

The key feature of the DL3600 is the software that comes bundled with the unit—namely the applications in Z-type, a PC-related utility letting the printer to be used as a typewriter to be controlled at the computer's keyboard and be programmed to create samples of commonly printed forms. Another package, DL Works, enables the configuration of the printer to be changed from the PC, as bypassing the printer's control panel.

Fujitsu is making some bold claims for the DL3600. The Japanese giant claims that it's the fastest in its category at 360 cps. The closest competition is the Epson LD1170 which has a top speed of 330 cps.

into a global DO service, available to subscribers of all their services.

The idea is the result of user frustration. Although most of the US E-mail services are inter-connected, if the subscriber does not know the address (mailbox) of the recipient on another system, the message can't be sent.

There are now plans for a pilot DO service—spanning AT&T, Telenet, Distelcom, other E-mail and on-line services—to be launched early next year. A date for the launch of a full E-mail DO service has not been announced.

AUTOMATIC BLEEPERS

Calling all Amiga Portfolio users with an alpha numeric bleepor—Telektron, a Phoenix-based company, has come up with a software/hardware combo for the Portfolio that lets you to phone line. The system allows the off-line preparation of messages to on-line telephones.

The battery-powered system fits nicely into the pocket and enables the user to 'drive' an on-line beeper from most phones. This saves having to call the service operator. In the UK, most of

the major teleprocessing services, including BT, offer on-line entry of messages.

Contact Teknow!, 1520 South Prentiss, Suite 101, Tempe, AZ 85081, USA. Tel: 601-83-600-899-7262.

THE 'WORM' CASE TURNS

Just when you thought the case of Robert Morris and his famous Internet worm program was closed, along comes the Electronic Frontier Foundation (EFF) to re-open the whole affair.

Morris was convicted in January last year for his release in November 1988 of a computer worm, a self-replicating program, into computer networks that link university and military research facilities, at the US. The worm infected and shut down an estimated 6,000 UNIX-based systems attached to the Internet, Arpanet and Bitnet networks.

Morris was sentenced to three years probation, a \$10,000 fine and 400 hours of community service. He also had to pay costs relating to his trial.

The sentence was immediately criticized, with many on the law enforcement side saying that Morris should have

received a prison sentence, while others felt that, since he had convinced himself that the damage was caused by virus rather than a malicious act, no penalty should have been imposed.

The EFF, meanwhile, is a non-profit organization in the US set up by a group of computer industry guru's to protect the rights of individuals involved in hacking cases. According to Tom Wiles, a senior lawyer representing the EFF in the case, Morris' case is far from cut and dried as far as the courts are concerned.

"We will file a brief supporting Morris' contention that the 1986 Computer Fraud and Abuse Act under which Morris was charged is much too broad a statute," said Mr Wiles.

PC SECURITY SYSTEM UNVEILED

Most PC security systems rely upon a key or similar device to gain access to the machine. If you lose the key, you've had it. Now a small Canadian company, Travco Resources, has come up with a hardware/software system that analyzes the way you type. If you password is 50 characters long, it's really only at the keyboard.

Travco's system is called Biopassword. The system 'fingerprint's a user's typing. The company claims that each user's keyboard typing patterns are unique, so a keyboard 'fingerprint' can be logged and compared.

The \$485 system consists of a half length PC expansion card and a software support program. As each user logs on to a PC, the security system develops an electronic signature record of that user. The user's file is constantly updated to take account of changing keystroke dynamics.

Contact: Travco Resources, Suite 505, 850 Bloor Street, Vancouver, BC, V6Z 2J1, Canada. Tel: 604-694-8844. Fax: 604-694-661-3279. ■

BUDGET INTERNAL HD SYSTEM FOR THE AMIGA DEBUTS

ICD, a company renowned for its budget hard drives for the Amiga, has reduced the asking for the Amiga. This month we, the US



• **ICD**
Amiga
PCI/Wide
Fast-HD
width: m. 3.5in.
500 MB capacity

can finally rejoice. ICD's series of hard drives for the Amiga 500 at widths of m. 3.5in. are now very competitive prices.

The key feature distinguishing the ICD series from the rest of the market is that it allows 128MB to be added to Amiga 500's SCSI-based Quantum's range of 3.5in. hard drives (which are known as Fast-Disk drives in the PC community) via SCSI compatibility, available in 128MB and 500MB sizes.

SCSI drives which are a direct replacement for the standard Amiga 500 floppy drives and could compete with an internal SCSI hard drive to drive the system. Pricing has been set at \$164.95 for the 128MB drive and \$283.95 for the 500MB version.

Contact: 101-1216 Rock Street, Rockford, IL 61052-1237, USA. Tel: 312-645-9568/2239 Fax: 2161-615-0568.



CIRCUIT CITY

Building, fixing or expanding your system can give you a lot of satisfaction. Keith Pomfret answers some of your questions on the trickiest bit of all... soldering

We get more letters and questions about soldering than any other subject on the technical desk. Rather than answer each of them individually, we're explaining a little more about what solder is here - how it works and which types of solder to use. This should help you get the best results.

LIFE AS WE KNOW IT

Without solder, there would be no way of building computers as we know them. Solder forms the "glue" that joins components to circuit boards and makes the important electronic connections that allow electrons to flow freely around the circuit.

Solder is essentially an alloy of two metals, lead and tin. Its useful properties in an electric circuit are that electricity flows easily through it and has a low melting temperature and is therefore malleable.

If two components or a component and a terminal on a circuit board are held together and solder is applied by melting it with a hot soldering iron, the solder will run across the components and when the soldering iron is moved away, will cool in a few seconds to provide a "bridge" between the components that electricity can flow through.

When computers or any of the electronics are manufactured, a lot of the soldering is done by machine and even that which is done by hand is done on specialised rigs using a purpose-built solder gun.

When you want to solder, we have to rely on hand and eye, with a soldering iron held as steadily as possible and the solder fed gently on to the job.

CAST IRON DECISIONS

The choice of soldering iron is up to the individual, but for those delicate electronic work, an iron with a fine tip is obviously best. The thinner the tip, the more delicate you can work.

There are several kinds of soldering iron. The easiest, and most unsuitable, is the unpowered kind. This is a large unwieldy heavy iron that needs to be warmed in a fire or flame until it is cherry red. It can weigh a couple of pounds and although a plumber might use it for work on lead piping, it shouldn't be used on electronics.

Menz is an electric iron. This plugs into the mains (or on some occasions into 12V car electrics) and comes in many variations from a simple plug-in, heat up and go model to a thermoelectrically controlled solder station. It takes a few minutes to warm up and in all of its



* **Solder blower** - If it all goes wrong, this desoldering tool will undo the damage. It works like a bicycle pump in reverse and sucks the solder from the heated joint.

forms is suitable for electronic work. Another kind of electric iron is shaped like a gun and warms up in seconds. It is very convenient but its pistol shape can make it cumbersome for fine work.

Finally, there's a self-contained gas powered iron. This works on Butane gas (also used to fill cigarette lighters) and is ideal in that it can be used anywhere without mains power. It takes a bit of getting used to but is the most flexible and versatile. It has interchangeable tips that can vary in width from 0mm to 4mm making it suitable for most jobs.

SOLDERING ON

Solder comes in many items from the weighty bar of industrial solder used by a plumber to a fine thread of wire, not much thicker than a hair that can be used for fine work.

The large thick industrial strength solders are an alloy of tin and lead and as such are unsuitable for fine work. In its raw form, solder doesn't flow and take very well and needs a catalytic agent to help this. The catalyst used is a powder known as flux because of its properties with regard to helping things to flow.

A plumber might dip his bar of solder in a can of flux powder before applying it to the job. This may be fine for large jobs but work around a printed circuit board where the components are less than a millimetre apart wouldn't be possible with this.

Electronics and hobby shops sell a huge array of different grades and sizes of solder, most of which are suitable for close electronics work. The magic word when buying solder is "tin/copper". This means that the solder has several coats of flux already built into it.



* **Gas powered soldering iron with temperature control**. It requires butane lighter gas and will run for 60 minutes continuously on a full tank. Available from Tandy at £19.95.

Thus, when it is warmed up by the iron, the right amount of flux is already present in the molten solder and this causes it to flow properly.

To decide which thickness of solder you need, look at the sort of job you'll be doing most. If it's all very fine work then you'll need the thinnest, finest solder. This will be less wasteful and less messy than thicker solders but will need a more careful touch. Most regular solder uses plus three grades. One small spool of the finest solder, a large spool of the next size up and a small spool of solder about 1.5mm thick for larger jobs and when working on mains equipment that has larger areas to cover.

ON THE JOB

The combination of the right iron and the correct solder for the job will make electronics work easier and the results more professional looking. Nothing looks worse than a job that is finished off with incisions and blobs of solder and components blurred by being touched by a hot iron.

Make sure to pick a soldering iron that feels comfortable in your hands and always work on a clean heat-proof surface. ■

TOOLS TO GIVE YOU A HELPING HAND

Desoldering braid - This is a must for anyone who regularly removes components from a circuit board. It is available in a variety of widths and lengths.

Desoldering pump - These are also very useful. They consist of a heavy metal vacuum capsule connected to a flexible tube. It is designed to help

in removing incision from a soldered joint. They consist of a heavy metal vacuum capsule connected to a flexible tube. It is designed to help

work when soldering tools cause trouble. The desoldering braid is a good alternative to a pump. It consists of a heavy metal capsule connected to a flexible tube. It is designed to help

TIN-TIN

To get the best results when soldering wire and cable, it should be tinned first. This means warming the cable end up with the iron and allowing a thin coating of solder to cover the exposed ends. When it comes time to join the components together, the tinned end makes this easier and ensures a better joint.



TECH TIPS

Find out how to network IBM hard disks, where to get a bubble jet printer, how to back up a lowcost PC and how to choose the best educational computers... with Keith Pamfret

Net result

In my organisation there is a real fear of spending money on IT but with a bit of luck my section may be given two IBM 7532's (hopefully with BIG hard disks).

We would like to have access to these hard disks from either of both machines at the same time (for example - what we have created in the way of spreadsheets on one machine may need to be read and amended by the other user).

To such a far as feasible with lots of tape, blue tick and rubber bands etc?

Bob Jennings, Wrexham

WELL, INSTEAD of using lots of tape and blue tick, you could try a local area network (LAN).

LANs enable computers to access each others' hard drives and would be the perfect solution to your problem. You could have only one machine with a hard drive and allow the other machines to access it, but, to be realistic, PCs really need a hard disk to be useful.

The cost of a LAN isn't too expensive, you'll be pleased to hear. The most common PC LAN is the Novell, and most dealers sell something along those lines.

Printer ribbon

Could you please tell me where I can purchase a printer ribbon for a Juki 6100 Dotmatrix Printer. I've tried lots of companies but nobody seems to stock this type of printer ribbon anymore.

Many thanks for your help with this problem.

Simon Hodgson, Coventry

IN THIS TIME, the Juki 6100 was one of the cheapest ways of getting Near Letter Quality (NLQ) output. It was very popular because of this, and I'm surprised to hear that you can't get a ribbon for it.

We don't have a phone number for Juki on file, but a possible alternative is to contact: WADCI on 081-649 1000 and purchase some of their amazing ribbon re-inking sonic. This CFC-free epoxy will ride you through several re-inkings while you heat high and low for the ribbon. If you can't find the ribbon at any computer dealer or supplier, try the regular computer shows and fairs. They are a veritable cornucopia of necessary widgets for people with ailing computers and peripherals.

Bubbling jets

I am considering buying a new printer, and have decided that a bubble-jet printer sounds like a good idea.

The Hewlett Packard Designjet

500 has been getting a lot of coverage lately, but I also want to find out about the Canon desktop bubble-jets.

To this end, I'd like to write to the manufacturers asking for information. Could you please give me their addresses?

Colin Howard, Tyne and Wear

BUBBLE-JET printers are becoming a popular and inexpensive way of getting good quality output for not too much money. However, Hewlett Packard's Designjet 500 is an inkjet printer which is different. Inkjet printers spray the ink on to paper, whereas bubble-jet printers, such as Canon's 510 series work on a pulse heated capillary action.

Canon's low-end bubble-jet, the BJ300, is available around the £300 mark, and HP's Designjet 500 is priced at about £250. Both offer 360 by 360 dpi resolution, though neither is as good as a laser printer.

To answer your question, Hewlett Packard can be reached on 0344 424688; Canon on 081-773 3173.

Games link

If I bought a Nintendo Game Boy for my son, would he be able to connect it to my PC monitor in order to watch the games in colour?

Ralph Moore, Hereford

NO, THAT WOULDN'T be possible. The Game Boy has no method of



• There's no method of outputting from Nintendo's Game Boy to an external monitor and anyway it's black and white.

outputting to an external monitor and the display on the Game Boy is monochrome.

Slow PC

I have an original lowcost IBM PC AT which is great except for one thing - speed. When I try to use DTP and graphics programs, it takes a digital megadon and slips into crawl mode.

I'm happy with its power supply, my expansion cards for scanner, sound and other peripherals are happy and without problem. I'd like to upgrade to a fast processor without total system upgrade. I realise that I could put a faster 286 in a matter of seconds but I wonder whether a 386 can be fitted without replacing the whole



* If you've got a block suit and a smug grin, you too could carry away a PS/2 in the manner prescribed by this IBM publicity shot.

It's an outrage... the saga continues

THERE SEEMS to be no depth or height to which you will go after clients to prove to us that you've got the most outrageous bid. Dan Wilson went to an auction and picked up a moustache-sized bargain for a calculator-sized price. Here's what he had to say:

How about this for the bargain of the year? It was a toy auction room in the West End and while everyone was busy looking at Amstrads and Olivettis I came across a large cardboard box with two monitors; two keyboards; two double click drives; computer; one large GEORGIE printer with sheet feed and cut paper feed; a jungle of cables and plugs and a switching box.

Nobody seemed to know the name DEC but they all knew Amstrad, so when the Amstrad came up it fetched a silly price.

slightly more than retail, but when we reached the SEC nobody made a bid. The auctioneer started at £1... £20... £10. I raised what I hoped was a sensible hand. And it was silent.

But there was an even bigger shock when I went to collect it the next day. An even bigger plastic box hidden away on top of an old wardrobe with all the manuals, software, disks - word processing, maths, spreadsheet etc.

And to put the icing on the cake, when I got it home and opened it in, everything worked perfectly, and the screens were amber and not that awful green. But yeah, hoist on me!

I enclose a copy of the catalogue page and the receipt, although you'll notice I've folded the receipt to hide the name of the auction room. A miser I am... Should I run?

Dan Wilson, Middlesex

NEC Making the most of multimedia

I have money in hand or cash in pocket, depending upon which way you look at it, and want to get into multimedia. Should I go out at the end of the month and buy CDTV or CD-I?

Commodore's CDTV looks interesting but from the

several hundreds of technical data available so far, CD-I looks the best specified. I want multimedia for entertainment and reference, games, data and, most of all, to enjoy.

D. B. Fenster, Redditch



The first affordable multimedia machine available to the man in the street.

motherboard? I don't mind having to pay for the board but I can't bear the thought of cannibalising a perfectly good machine when upgrade may be possible.

Mick Drough, Coventry

IT IS PERFECTLY possible to do what you want without damaging your machine. The solution is a small board that fits into the socket vacated by your Z80. You remove the Z80, slot in the accelerator board and set two跳wires of in processor's tail, you've got a 386SX machine. This is only possible with the 386SX and not the DX. This is because the DX shares the same 16-bit architecture as the Z80. While the DX is a full 32-bit processor, the AT's 16-bit architecture wouldn't support the DX chip.

With a 386SX running at up to 25MHz, you would see an immediate improvement in your DTP and also gain the other benefits of the 386 processor, those include virtuality. This means that a 6Mb can contain several MBs (the processor in a PCXT) and thus allow multi-tasking.

If you want to try your skill at winning a deal like this, you should turn to the inside back page where this week's £300 plus comp lets you win the SOTA Express/386 board. If you don't win, you can get the Express/386 from CTS on 0208 559944.

I'll use in a newsletter I produce as the ST, I know that I could print it out from the PC and physically stick them into the design after reducing them on the photocopier but that wouldn't be cricket.

Adrienne Davison, Belfast

THE PPC540 has 720K 3.5-inch drives and produces a disk that can be read by the ST. This means that it's simply a case of saving the file on your PC as an ASCII file that can be loaded directly into the STPP program on your ST.

An ASCII file is one which contains codes for letters, numbers, spaces and carriage returns and nothing else. This means that it's global file format recognised by most word processing and GTP packages.

School's Out

The school where I teach IT has taken off for the summer and it's my conceivable job to sit all of the aging BBCs and Amstrads and replace them with something a little more up-to-date.

I am between a rock and a hard place with regard to choices. The governors are "encouraging" me to buy PCs with the promise of free (and inappropriate) software taken from various matches they own.

The headmaster feels the "Avin or nothing" comp rumbbling other people and dealing with people that we know and trust. Both groups are adamant that I know best and absolutely insist that I make a decision based on my own judgement of the needs of the

IF YOU WANT to go out next week and buy a home system, there's only one to go for and that's the CDTV (see last weekend's issue in this issue). In terms of pure specifications alone the CD-I probably wins by a short head. The problem with CD-I though is that it's not available and the best guess is 12 months before domestic CD-I machines appear.

CDTV is a true interactive multimedia machine based on computer technology and able to process data in the same way as well as sound and graphics from CD data disks.

In short, if you want something that's available now, get the CDTV. In the worst possible scenario, if it doesn't catch on, you can buy a keyboard and disk drive and you've got a 1MHz Amiga with floppy and optical storage.

school.

I have decided to make up my own mind and up until a week ago I had intended, if I had to be Amigas or Macintoshes and I wasn't sure which.

A discussion with

Commodore left me decided that while the Amiga is a fine machine, the price drop of the Macs made it the machine for my school.

What I need to know and no-one seems to be able to answer is: Does Apple have a true commitment to education or is it happy to dominate the STPP market and leave education to the others?

Name and address withheld for sake of job prospects

APPLE IN THE SHAPE of its UK boss Mike Newton confirmed that Apple does have a firm commitment to education in the UK. He cited several examples in which the company has been actively involved in the educational market, including Apple UK recently receiving an order from a group of 18 Scottish schools for 350 Amigas worth \$500,000.

The Macintosh has long been perceived as an educational computer in as much market in the US. Apple UK is making inroads into the UK market by showing education authorities that the Mac, with its intuitive interface, is the ideal learning tool for students from primary to postgraduate levels. At present there are around 100,000 Macs in the UK educational market.

Myths bashed

You'll be here tomorrow to learn about how to make the most of your PC.

ABC guide to modern technology – part II

IN Circuit City, issue 141, we started to explain what all those initials in the computer world stood for. This week, it's the second half of the alphabet.

NTSC National Television Standard Committee or, the television system used in the United States. Much less clear than the PAL system we use in the UK. It uses fewer lines, which explains why American discs don't fit up all of the PAL screen. The NTSC format is known for losing the hue of a picture and consequently, the NTSC system is sometimes nicknamed Never Twice the Same Colour.

NUL Network User Identity. A user's identity on a communications network offers a password.

OCR Optical Character Recognition. An electronic way of scanning and recognising characters from a printed page.

PAL Phase Alternation Line. A colour TV system, as used in the UK.

PCB Printed Circuit Board. The board on which all your computer's electronic components have been soldered and connected.

PIXEL Picture Element. The pixels that make up your TV and monitor display screen.

PNR Personal Identification Number. The code by which you, or something like your credit or 'money' card is identified and used.

PS5 Packet Switch Stream.

RAM Random Access Memory. The memory in your computer is RAM, able to be accessed and erased by the user and computer programs.

ROM Read Only Memory. Unlike RAM, ROM can only be read from, not to. This prevents the contents of ROM from changing. This is why operating systems are stored in this way.

RS232 Standard serial interfaces, used to control devices such as modems. **RS423** Same as RS232 (above).

SECAM Systems En Couleurs A Modulate. The colour TV system used in France and elsewhere.

TTL Transistor-Resistor Logic.

UHF Ultra-High Frequency. **ULP** Uncommitted Logic Array. A group of chips which is not committed to any particular part of a computer system.

UNIX An operating system. Popular in multi-user systems. Developed by AT&T in the US but adopted by many other computer companies. New committee of a standard, UNIX can run on the largest mainframes, right down to microcomputers.

VHF Very High Frequency. **WIMP** Windows, Icons, Mouse, Pointer. A graphical user interface uses Windows, Icons, Mouse and Pointer to control and run programs.



Letter bug

is there a simple way to get a letter from a word processor on a PC to one on an ST? The PC is an Amstrad PPC540 and the ST is a \$206RPM. The problem is that the letter's a very long one that I want

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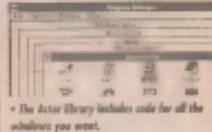
From doing your sums for you to drawing pictures of your code, Mary Branscombe goes in search of new programming tools

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ACTING UP FOR WINDOWS

Aster 3.1 is the latest release of an object-oriented development system for Windows 3 where the code generated with Aster can be linked to Dynamic Link Libraries of functions written in languages like C and Pascal. The systems let you access up to 16MB of memory and the memory swapping system uses a hard disk as virtual memory that lets



+ The Axler library includes code for all the subroutines you want.

you run applications that are up to 16MB in size on a PC with 64KB of RAM. The built-in classes in the Axler library include windows, dialogues, graphics and functions for printing and managing data. More information from Newcom on 0289 888004.

RUSSIANS GO WITH THE FLOW

Not many people design their programs with flowcharts these days, but they are very useful for understanding how a program actually works, especially if you didn't write it yourself.

R-Tech (Russian Technology of Programming) is a visual programming tool for C, C++ and Pascal on the PC. If you feed in existing source codes, it produces annotated flow diagrams to show

you what's going on. Alternatively, you can write your programs as a flow chart with code attached and R-Tech will generate your source code from this chart.

You also get a graphic debugger with break-pointing and animation facilities that puts you back to the flow chart when anything goes wrong, highlighting the code where it thinks the problem is. R-Tech works with Borland Turbo C++, Turbo G and Turbo Pascal compilers.

Contact Tony Vibis & Associates on 0893 811115.

FUNKEY AND FREE

Compiled database programming languages give you faster code and Hancrest's Clipper compiler is very popular. Life is now a little easier for Clipper programmers because Funkey 1.52, the developer's library for the Clipper compiler now works with version 3.01 as well as the Summer '87 release. If you're a registered user, you can get a free upgrade from CBS on 081-924 4842; if you haven't tried the library yet, you can get a free demo disk from them.

GETTING UP TO SPEED WITH QBASIC

QBASIC comes free with MS-DOS 5, replacing the now venerable GW-BASIC (it stands for Gez Mittz, in case you've always wondered). However much you know about programming, one of these books should be what you're looking for to get the most from the language.

MS-DOS QBasic • Kris Janss • Microsoft Press • 0-59615-355-4 • £5.95

This is a quick reference guide that contains every statement and function in the language in alphabetical order. If you want to look up the parameters for changing the screen colours or the list of error codes generated by DOS commands, this book will give you just the information you want, with example code in most cases. If you can't remember exactly which function you need, you can look up a similar or related command and the function you're looking for will probably be listed and cross-referenced. If you have an idea of what you need to know and you want it quickly, this is the book you want.

MS-DOS QBasic Programmer's Reference • Robert Arssen, Christy Gennell and Harry Henderson • Microsoft Press • 0-656515-347-3 • £22.95

This is the first official guide to QBASIC and it's an impressive and weighty tome. The functions of the language have been grouped logically rather than alphabetically, so that all the printer control commands are in one place, next to the keyboard and joystick commands.

Each chapter starts with a tutorial that's full of examples and explanations, followed by a reference section containing the relevant commands, again with examples and a lot of useful code; the chapter on graphics has programs for drawing different bar charts. You wouldn't need to know a great deal about programming to use this book and it covers just about everything you need to know about QBASIC to do some serious programming.

FROM C64 TO C128 AND BACK AGAIN

I'm using the Commodore 128 but I want my programs to run on the C64 if necessary. When I go into C64 mode to check the programs, I can't get back to 128 mode. Can you tell me how to do it automatically?

Jan Wiersdorff, Whitleydale Unfortunately not. When the 128 switches to C64 mode, the 1920-Memory Manager (unit #8888) removes itself from memory - it normally resides at \$0010-\$1000 and \$A000-\$C000. Once the ROM is gone, you can't get back to C64 mode without a cold reset.

However, if you have an 8K Kernel handler plugged into the 128's expansion port you can reset the mode like this: because it can bypass the way the machine would normally work and reset the system to forced to code in C128 mode. The command you need is no longer a recent addition that's in a program. You need to swap into C64 mode, run up the 128 program you want, maybe write the results or output into a file to check over at your leisure and then go back into C128 mode. That sort of program is normally called a script.

THE CHEAPEST UNIX YET?

The Mark Williams Company is the US distributor of the Linux operating system for the PC that sells for \$28. Comerec's 2.2 costs \$30 in the UK from AET on 021-705 8933. For that, the latest version of the Linux clone includes a full version of C, including utilities and an extensive library, and grep, a pattern search program for C source code.

There are two "shells" that act as front ends, a Korn shell clone and an improved Bourne shell. You also get the powerful tcsh line processor that supports Postscript and LaserJet fonts. ■



Running MS-DOS QBASIC • Michael Hansen and David Rygny • Microsoft Press • 0-59615-343-6 • £19.95

This book is ideal for someone who's never done any programming before. Clear and simple explanations and useful examples are followed by questions and programming exercises. All the answers and programs are in the back of the book, so you won't get frustrated wondering what an answer really was.

The last tutorial in the book covers debugging your programs, going through a sample program step by step and pointing out the subtleties that it's so easy to make. This is an easy to follow introduction to programming that covers the language thoroughly.

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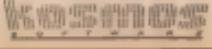


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AMIGA, ATARI & PC SOFTWARE

The Tipster

This HORSE RACING software was used to select the 3000 MORTONES COIN outsider in last years GOLD CUP. Data for this program requires the RACING POST. An INTERNATIONAL version is available for AMIGA & ATARI computers using the DAILY MIRROR for data via UK routes.

The Punter

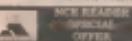
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AMIGA FAVOURITES

Amiga games are a bit thick on the ground this week and so here's a run-down of the best of the bunch.

Pacman 87 is, believe it or not, an Amiga version of the ancient Namco all-time classic **Pacman**. It features the antics of a voracious yellow beach ball that's only ambition in life is to eat coloured dots.

This particular incarnation of **Pacman** tries hard to improve on the theme by adding lots of different mazes and bonuses. The game comes courtesy of Lynbreck PD and is, in itself, a very enjoyable romp. It takes the main idea and turns it around a little, giving the player a bit of variety.

The ghosts you have to avoid are a little cleverer and as a result, the game is rather difficult. The graphics aren't up to much, but they're more than adequate for this kind of game. Sound is decent, with wobbling and out-of-tune sound effects.



• **Pacman 87** – an Amiga version of the original **Namco** classic.

THE PD COLUMN

This week Frank O'Connor tries out the best Amiga games in the Public Domain; reviews some games for arcado-philes and delves into the 8-bit emulator market

You can't really go wrong with the basic idea of **Pacman** and so it comes of being a polished and playable little game and easily one of the better **Pacman** clones on the PD scene.

ARCADIAN PLEASURES

Arcade turfs might prefer to get hold of a disk from Start. This disk contains some truly brilliant little games for the Amiga, including a neato **Missile Command** clone, a spiffy **Qix** clone and a radically superb **Galaxian** clone.

Starting with the **Galaxian** game simply because it has the most awesome title, it's called **Gal Actions** (got the past?) and takes the theme of swooping, space combat to new heights. Well, actually it doesn't, it simply copies the original game exactly. No bad thing, **Gal Actions** is a bit at a laugh and one of the best shoot-'em-up's ever.

Another superb shoot-'em-up is **Missile Command**. The game when released in the arcades introduced the



• **Missile Command** – a superb shoot-'em-up which introduced the track-ball, and a **hitchhiker** variation of the original arcade game.

novelty of the track-ball. The object of the game is to blast incoming missiles out of the sky. You follow the trail the missiles leave using the cursor. Firing causes a biggish explosion, which will hopefully takes out the missile you were aiming for.

The point of this is to defend these cities at the bottom of the screen. If all three are struck by incoming enemy fire, then the game is lost. It's a fairly faithful copy and one-fifth of the original machine should seek out immediately.

Also on the disk is a neat **Qix** clone. **Qix** is a theme currently recurring in Ocean's conversion of Taito's **Varied**. The PD version is called **Bally 2**. Good menu for a game which is entirely identical to **Bally 1**.

Still, that isn't a problem, **Bally 2** is absolutely superb. It looks a brilliant idea, uses it well and hey presto a marvellous game worthy of anyone's attention. The idea is to fit a screen with colour, to do so, you have to box in areas with the trail your craft leaves behind. When you make a box, it fills with colour and you can move on to another area.

Trying to prevent your hero antics are an assortment of mind-numbing baddies. Don't worry about them too much, as frankly they're a bit stiff. You have to reach different target percentages, depending on what screen you happen to be on. 100 per cent is about the average target required and it isn't as easy to get as it sounds.



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1083: Copper Writer/Screen Designer. By Frank Tout. (For programmers only) £3.00

1088: Word in Edgways. This is a good puzzle game. By Chris Banks 1MB... £3.00

1100: School Timetable Creator. (Print your timetable). By Keith Grant. 1MB... £3.00

1102: The Sprite Designer. A good way to draw/save sprites. By Frank Tout... £3.00

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OUT ON THE PISTE

AmigaSoft has released a lovely little game called *Downhill Skier*. It's very reminiscent of the ancient Spectrum game, *Horace Gets Sliding*. This is no bad thing; the graphics have been taken up a notch and the sound has been given a shot in the arm too.

The aim of the game is to traverse a massive ski slope, avoiding trees and leaping obstacles. Flags appear at various intervals and can be collected for bonus points. The action is intense and the pace of the game is exhilarating.

It can be repetitive but is so much fun, you probably won't notice. It looks like the Amiga PO game series is finally going places and will soon be giving budget games a run for their money.

8-BIT EMULATION

ST owners who miss the halcyon days of the Amiga XL series should not feel longer. If they're any computer you fancy emulating on your ST, then you can with a little hunting around, get hold of an emulation package covering almost any eighth machine you care to mention.

The XL emulator is particularly good. Entire software based, you can boot it up and run it almost immediately. The program emulates the 8-bit 68000 processor and includes the ancient and almost unplayable Axim BASIC.

The program is extraordinarily impressive, with an superb screen that



allows you to select several different XL configurations. You can choose from the 328, 64K and 128K machines, including the updated XE system.

The machines were quite sophisticated for their time, with a then incredible 256 colour palette and rather groovy sound chip. Unfortunately, the high price point and poor marketing meant that they never really took off.

You can boot up your preferred system and proceed to enter old Atari listings or make up your own. If you want to run XL software, then the included converter program could be the answer to your prayers.

The converter turns 8-bit code into a form that the ST (with the emulator installed) can understand. The difficulties of loading this software are considerably reduced by the inclusion of a weird RAM

disk option. Once you have the necessary cables and drives set up, you can transfer the programs you need to use in one sitting. The computer then allocates RAM space as a kind of fake drive. In this way, the emulator is locked into thinking that the machine is hooked up to an XL floppy drive and reads the RAM just like a disk.

The ST user will appreciate the difference in speed between the two systems. The XL has a notoriously slow drive, with bigger files taking as long as ten minutes to load from disk.

Similar emulators are available, covering the BBC Micro, the Apple II, the Commodore 64 and most importantly, the Z80. The ST emulator is probably the worst in the lot. The main problem is it's very slow. The archaic BASIC and lack of features make using it an absolute

BUT WHERE DO I GET ALL THIS STUFF?

Goodman PDL,
15 Connaught Close, Melk Hill Estate,
Langton, Stoke-On-Trent,
Staffs, ST3 1SW
Tel: 0782 335650

Start
20 Holme Side, Sunderland, SR1 3JE
Tel: 091 780987

Byteland
6 Mimby Close, Newark,
Notts, NG24 1JE
Tel: 0623 780987

Amiganuts
169 Dale Valley Road, Hollybrook,
Southampton, SO10 6QX.
Tel: 0703 785680

nightmare. It also seems unlikely that there is any practical way of loading 64 software into the emulator anyway.

The Beeb emulator features superb BASIC and is easy to use, but the Z80 emulator is the one you have to have. A keyboard map is supplied in the software and just as well, finding commands takes a multi-electronic cockpit all day, never mind a mere mortal. All of these packages can be picked up from Goodman PDL in Staffordshire. ■

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1137: VIRTUAL WORLDS. A 1Mb anim-demo from the well known Thomas Landsprung.....£2.00
1141: AMI-CHEQUE. Very good bank accounts program. (Note: Version 2 chip only).....£2.00

Many new programs have arrived, but there is no space to list them all!

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Fri 25 - Thu 30 Oct
At Birmingham NEC. Info: 081-888 4486

System Builder Wed 30 - Fri 31 Oct
At Sandown Exhibition Centre, Esher, Surrey. Info: 0822 614571.

Computer Graphics '91

Fri 5 - Thu 7 Nov
At the Alexandra Palace, London. Info: 081-881 9333.

Desktop Cad III Tues 5 - Thu 7 Nov

As above.

Open Systems III Wed 5 - Fri 8 Nov

At the Olympia, London. Info: 071-4722000 ■

Golden Moments

A look back into the history of computing with Express. If it happened we reported it first.

ONE YEAR AGO

• Something known as Zed-Card was released for the PC. Not for users paranoid about card-cards, but rather for those paranoid about others using their computer, the card could detect the presence of anyone entering the room. Once it had done so, an interested eye on the PC screen opened and actively followed the intruder's movements. Rates could also be added, just to show them you really meant business.

• With the introduction of the 386 and 386SX chips in 1985, the price of 286-based PCs dropped dramatically, reaching the sub-£1,000 mark by last year. Nowadays, instead of the new 486 machines, you can pick up a 386SX machine for about £3,000.

TWO YEARS AGO

• Following the new Copyright law and doubts about the legality of software copying devices, it was alleged that one of Power Computing's programs had been copied off and was being sold by Executive Micros. This program in question was Blitz, a copying program.

• Bad news for Apple, with a San Francisco Judge refusing to accept that Microsoft and Hewlett Packard had ripped off Apple's WIMP look and feel. The case continues to this day...

• Nintendo, that lovable Japanese company, had them all worried. It was rumoured that the firm was intent on buying up the rights to all the big arcade games, with the intention of releasing them on its own consoles and preventing their release on computer formats, supposedly to persuade people to buy Nintendo consoles.

With arcade game producers Tengen and Sega opposed to Nintendo's plans, the computer games market has yet to dry up, although the recent rise in the popularity of consoles has hardly been good for the health of the home computer industry.

The Insider...

The Insider is filled this week. Since this column began various figures in the computer industry have been gathered together to form a support group to protest their fragile egos against them and open press speculation. Self-styled as FPIAF (Famous Industry Figures Against Gossips) with members falling on the rather masonic lines of FIFI. This could be allowed to continue. I would say my constitutional rights allow me to do as I like with my mouth, but as far as the law goes, if you say that you are going to Paris alone, make sure that the switchboard knows it is not to tell callers that your secretary is with you!

relationships which might well have been reaching breaking point. That's the theory anyway. Unhappily for certain managing directors of certain computer dealers (justifiably called 'box-sellers' in the trade theory and practice don't always mean a harmonious climate. Especially when the succeed half of the freight relationship - the wife - is not in Paris at all. Now remember business people, attention to detail is all. If you say that you are going to Paris alone, make sure that the switchboard knows it is not to tell callers that your secretary is with you!

A PYRRHIC VICTORY

It comes to something when an Express hack has to sit and listen to another of his colleagues being abused over the phone by a certain master of drives who objected to a shoot from the Lip column in Express' opening pages. Threatening

to pull advertising is all well and good, and Microsoft has every right to do so. However, this strong arm tactic does have a nasty tendency to boomerang and result in smacking the indulgent in the face when the magazine in question (a sister magazine of Express) refuses to take the advertising in the first place.

YOU SHAN'T GO TO THE BALL

to those any-folks in the rumours that the recent split between Atari and co-marketing manager Polar Studios might have had something to do with the forthcoming Computer Entertainments Show. Mr Stedman apparently felt that attendance would be a good idea. The Atari powers that be thought otherwise. Well, it's a relief to know that the resignation had absolutely nothing to do with a personality clash between Stedman and Alan M. Gleeson.

NOT SO BON SOIR

Paris is lovely in July. There's no sense in the air and the chance to nibble



Due to further expansion of our Sheffield offices, a number of vacancies have now arisen.

PRODUCER

If you have the ability to manage a game from conception through to completion, then this vacancy could suit you. Ideally you will have an understanding of programming, a sound knowledge of game structure and the ability to communicate with individuals and teams of programmers. Salary and benefits will be commensurate to experience. A current full driving licence is essential. Help will be given should the successful applicant need to re-locate.

PROGRAMMERS / ARTISTS

We require creative programmers and artists to work on 6502, Z80, 68000 and 8086 platforms. The variety of work ranges from Gameboy through to CD based projects. A proven track record is helpful but not essential as all applicants will be judged on ability. Salary and benefits will be commensurate to experience. Help will be given should the successful applicants need to relocate.

FREELANCE

In addition to our internal programming teams we are always looking to take on any freelance projects from external teams who have a proven track record. Demos and storyboards are always assessed.

All enquiries will be treated in the **strictest confidence**. Contact James North-Hearn or Sean Kelly on 0742 753423 or write to Gremlin Graphics, Carver House, 2-4 Carver Street, Sheffield, S1 4FS.

AMIGA / ATARI PC OWNERS

Supremodeem
Stockist

Miracom modem
Stockist

DON'T COMPUTE ALONE!

- By adding a modem to your system you can...*
- Access 100's of megabytes of games and software
 - Swap tips and hints with other like-minded users
 - Join in interactive games
 - Dini into 100's of bulletin boards (see list on page 42)

JUST ADD A MODEM

**Many different models available
for all computers**

Not sure which one to buy?

CALL NOW for free technical
advice.

All modems are brand new, fully guaranteed and come
with FREE interface cable and FREE technical support.

**Supply
Solutions**

081-566 3639

PC SURVIVAL KIT

PRODUCT: PC Crash Course and Survival Guide and PC Crash Course II
COMPATIBILITY: IBM PC, XT, AT and PS/2 computers
FROM: PC Productions Ltd
CONTACT: 0453 755200

Le's face facts. Most computer literate people would find a telephone directory more interesting reading than the majority of PC manuals. But as more and more people and they are being forced to come into contact with the dreaded modern technology at work, it's very refreshing to discover a pair of books that make learning about how to use a PC not just easy... but almost... well, fun!

The PC Crash Course and Survival Guide and PC Crash Course II by Peter Harrison are the perfect introduction to the PC for the complete beginner. They also make useful reading for people who have been using PCs for some time, as they cover an incredibly wide range of topics – everything from what the components of the system are called and how to stick in a disk to quite complex stuff such as creating batch files – in an extremely clear, concise and, above all, interesting way.

ZEN AND THE ART OF PC MAINTENANCE

One of the main pleasures of the books is the way in which they casually demystify some apparently quite daunting concepts. Typical of this is a chapter in The PC Crash Course and Survival Guide entitled, 'How to sound like a techie even if you aren't one' which effortlessly explains about bits and bytes, the sex of programs, formating and how a computer stores information, before encouraging you to get out your screwdriver and take a peek inside the system unit.

Peter Harrison is also keen to let beginners into the secret that many computer boxes actually do not know much more about PCs than the average newcomer. He demonstrates that all the long words and computer terminology are just as seemingly incomprehensible and complex-looking, but very thin crust covering to some quite straightforward operations and functions.

WHAT'S ALL DISK, THEN?

Any PC crash course will spend a fair amount of time explaining what a disk is, how it works and how to use it. In fact, the first few chapters of both books do just that. However, the Survival Guide goes on to explain what happens when you put a disk into a drive, how the computer reads the data and what happens when you write to a disk. It also covers how to format a disk and how to copy files between disks. The Survival Guide also includes a section on how to use floppies and hard disks, as well as a brief look at optical drives and tape drives. The Crash Course II book also covers these topics, but in a much more basic way, concentrating on the basics of disk operation and how to use them effectively.

If the thought of DOS prompts and 386 processors give you a headache, then *PC Crash Course* could be the remedy. Dave Golder investigates a possible cure for PC-phobics

INITIATION FOR THE NOVICE

The *PC Crash Course and Survival Guide* is for the complete novice and aims to teach 'the least you must know to buy and use IBM PC, XT, AT and PS/2 computers plus 386 compatibles'. To a large extent it achieves this, though it is vague on some rather major points, such as using a mouse (which is actually covered in *PC Crash Course II*) and buying and running software. The last bit actually lets you know how to get a program up and running in the appendices, which is rather odd, as that is what most novices will be most interested in doing (so they can play a flight sim, or something else a bit more exciting than renaming a file).

One of the main pleasures of the books is the way in which they casually demystify some apparently quite daunting concepts

However, as an introductory guide to finding your way around DOS, *The PC Crash Course and Survival Guide* is brilliant, and the simple exercises at the end of each chapter are essential for putting the knowledge learnt to practical use. The guide also comes with a live disk which demonstrates some PC programs but fails short of the quality of the book (see panel below).

PC Crash Course II takes up where the first left off, explaining further, more complex DOS functions dealing with common problems such as memory expansion, keyboard malfunctions and viruses and going into more depth about peripherals and applications.

Aside from some appalling cartoons, its main failing is that it repeats a lot of ground already covered in the first book without adding much more of interest.



* Learning about PCs does not have to be a dull experience as the PC Crash Course books prove.

However, the chapter entitled 'Batch Files' is nothing short of superb; by the end you could almost swear you were programming. When a shot while ago you hasn't a clue what plug your mouse in.

NEVER JUDGE A BOOK BY ITS COVER

Both books are very well designed and laid out, though it's a shame they never quite live up to the promise of their excellent covers. They make good use of spot colour to highlight commands and screen displays, which makes the exercises especially easy to follow. The diagrams are clear, but a few photographic illustrations would have been useful, especially of chips and motherboards, which do not come across well as line drawings. *PC Crash Course II* is packed full of really useful-at-a-glance tables of everything from clock speeds to the ASCII character set.

The *PC Crash Courses* are highly recommended for anyone faced with a PC for the first time. Whether used as a way of getting over technophobia, or as a first step into more serious computing, they are ideal. ■

ARE THEY WORTH READING?

FOR

- ▲ Very clearly and simply written but packed with information without being patronising
- ▲ Handy summaries at the end of chapters and glossaries of terms
- ▲ Good use of spot colour to make command lines and things which you would see on screen show up very clearly
- ▲ Useful exercises which help develop the themes of each chapter

AGAINST

- ▼ The disk supplied with *The PC Crash Course and Survival Guide* is very poor
- ▼ Both books would benefit from more photographs
- ▼ *PC Crash Course II* rehashes too much of the ground covered in the first book

COST

The PC Crash Course and Survival Guide £17.95
PC Crash Course II £15.95



Games Week

Stuart 'Scorer' Campbell sticks up his points card and gives those games a real rating - from the atrocious unplayable to the amazingly adventurous

STAR RATINGS

- Gerry Sadowitz
- Dennis Levy
- Bruce Morton
- Jenny Tarkuck
- Andrew 'Dice' Clay

A NEW SAM GAME!

If they all jumped up and down with joy at the same time, there probably still wouldn't be enough Sam Coupl owners to get the skin off a hog-pudding, and those there are will doubtless be ecstatic to discover that Braderup's wonderful *Prince Of Persia* mere moments away from release on their machine.

The almost-completed version seen looks extremely spiffy and it might just breathe a little bit of life into the Sam market, which is currently dying on its last due to software.



• Making 8 bits look like 16, it's

Sam Prince Of Persia.

starvation. If there's any justice at all in the world, this game will sell enough to make some other software houses bring out the old release or two, so if you're a Sam owner, you know what to do.

THREE-MINUTE HERO

Following on from the recent news of their egg-like hero *Dizzy*'s huge success on the 8-bits (190,000 sales of *Treasure Island Dizzy* on Spectrum alone), Code Masters has announced plans for a 16-bit *Dizzy* compilation.

The five-game set will include rewrites of several of the half-baked heists-a-like thumpers, along with a brand new one up to yet developing a title. The pack should hit the shelves in November at around £19.95, closing the way for an attempt at the Christmas No 1 slot.

'OH NO'

Please, tell me it's not true. It can't be, can it? Tell me it was just all a horrible dream, that I'm going to wake up any minute now and laugh it off, albeit in a slightly nervous and unsettled manner. I mean, surely Alternative Software hasn't finally just acquired the license to produce an *Alien*-like computer game, for release or at major formats around September this year? It doesn't bear thinking about, does it? No, I know it's just a ridiculous rumour put around by some mad scientist or someone like that. It must be... I hope...

HERE IT COMES AGAIN

There are releases. Then there are re-releases. Then there are half-assed attempts at squeezing more cash out of punters smart enough not to buy mucky old rubbish the first time out, but not quite smart enough to realize a 'bargain' at the second time of asking. You need to find out which is which. Luckily, I'm just the chap who can tell you...

This week: SHOOT-'EM-UPS

SUPER GRID RUNNER - Action 1E

• Amiga and ST - £7.99

This Jeff Minter game followed much the

same path as all other Jeff Minter games

- loads of speed, loads of zapping, loads



• Oh, it

doesn't look like much, but boy can you play it...

of cabinets and loads of Pink Floyd logos. Unsurprisingly enough, it's a sequel to his year-old *Bit-Blit Conquest*-style blaster, and takes a very similar format, but it's extremely slickly done, with beau-

TOP 10

(Chart compiled by Sogos, © European Leisure Software Publishers Association)

Rank	Game	Platform	Price
1	Bubble Bobble	Amiga/ST	£P-20/AM ST
2	Aladdin	Amiga/ST	£P-20/AM
3	Magic Land/Zone	Amiga/ST	£P-20/AM
4	Cyberia-Cyberoids	Amiga/ST	£P-20/AM
5	Renegade 3	Amiga/ST	£P-20/AM
6	Gradius/Wing	Amiga/ST	£P-20/AM
7	Double Dragon	Amiga/ST/CD32	£P-20/AM ST
8	Midway Classics	Amiga/ST	£P-20/AM ST
9	Papero	Amiga/ST	£P-20/AM ST
10	Phantom Zone	Amiga/ST	£P-20/AM ST

(Chart compiled by Sogos, © European Leisure Software Publishers Association)

Chart compiled by Sogos, © European Leisure Software Publishers Association

RBI TWO BASEBALL

'Hold on', I hear you cry, 'RBI Two? What happened to RBI One, Hold IT?' Well, it was released years ago on the Amiga, but it wasn't until the sequel was out that anyone thought of making it fit the Amiga.

It's a baseball game (no, no responses there) in the mould of the very classic *Baseball*, but transformed a bit with the addition of sampled speech, lots of background noise, an evaluation introduced with dynamic animated displays for just about every occurrence in the game, and lots of other nice presentation twists. Which would all be to no avail if the game was a duffer, but luckily it isn't.



• This is the view you'll see most of, the traditional 'behind-the-batter' shot. The inset screen in the top corner shows one of your batters starting a home run before the next hit.

When you hit the ball, the action switches to an overhead view, which really depends on the ball's flightpath. The ball actually leaves a dust trail behind it which makes it easier to spot.

perfectly reasonable buy if it wasn't for the marginally silly price tag. £30 is just too much for an essentially simple game like this (even if you do get a 'base' baseball cap). In the package, and unless Domark bring it down to a more normal level, I can't say that this is very good value for your money at all.



• This dodged-looking character is the ball, and it performs different animated shots depending on the shot type played. Here your batters are set and the ball bounces away depressed, about to be batted off screen by the words 'All over'.

TURRICAN 2

Windows/Mac + Amiga + ST/PC + Commodore 64 + Amstrad CPC + BBC Micro + Amiga CD32

This game was released on the 16-bit quite some time ago to considerably critical acclaim, though there were several people who voiced complaints about its similarity to the first Turrican (well, there was me, anyway).

Now Turrican 2 has finally finished combining all the 16-bit goodness of platform blasting action into the Amiga, and the results are pretty stunning.

The graphics would defy the belief of anyone who was around in the earlier days of the Amiga, being packed with colour without any loss of detail or blurriness. Indeed, they're not that far short off the 16-bit versions, and the sound is solid and jarring throughout, but it's the playability that really grabs. The usual levels are packed with things to do, others to destroy and secret bonuses to discover, and while you get deeper into the game it suddenly changes into an A-type-style shoot-'em-up, knocking out the old man.

Turrican 2 is a game that seems more at home on the 8-bit machine than it ever did on the Amiga and ST, and while it's probably not (as some Amiga reviews are claiming) the best CPC game ever, it's almost certainly the best shoot-'em-up the Amiga's likely to see. A magnificent technical achievement which is, for once, also a great game.

stal presentation and the kind of addictive blasting action that went out of fashion years ago. Hardly fun to say, it's excellent fun, and the kind of game that you'll never tire of, so long as you fancy it's bit of a pool-slashing session.

R-TYPE • The Hit Squad • All formats • £7.99 IBM 16-bit and £3.99 for 8-bits. The classic Amiga spin-off wins a conversion that many consider won't completely impossible in the 8-bits... and

adding a bit of even the Amiga's own ST Actionware proved. There are ways with a set IBM conversion of variable quality from the slightly simplified, but very playable ST version and the less-simplified but not-so-easy-to-explore Amiga one. In the ultimately amazing Spectrum copy, The Spacey was pushed beyond its limits with huge graphics bursting with non-clashing colours and a palette which replicated the Amiga original perfectly in almost every way.

All versions worth the possible



• Turrican 2 does with Amiga what it did with the Amiga CD32. Well, it's *deja vu* if you're metal.

REVIEW BY STEPHEN SEAGREN

STARS

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SURVIVAL IN THE PC JUNGLE



PC CRASH COURSE & SURVIVAL GUIDE

PC Crash Course is a computer book with a difference. It is aimed at those who do not know anything about computers. It will help you learn about your computer step-by-step. Price £17.95 incl. free program diskette.



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Tel: 0453 755200 Fax: 0453 755400

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OUTPUT MADE PERFECT?

For serious desktop publishing output, a Postscript laser printer is now almost a necessity. Tim Howell puts the Epson EPL-7500 to the test see if it's got what it takes

PRODUCT: Epson EPL-7500 Postscript laser printer

COMPATIBILITY: Amiga, Atari ST, PC, Macintosh

SUPPLIER: Epson

Ordinary laser printers, while being more expensive than dot matrix models, make up for this by having excellent print quality. However, for serious desktop publishing, you really need a laser printer that is Postscript compatible. Postscript is a language which turns documents into a description of what the final printed page should look like, which is then converted by the printer for improved output.

Epson's EPL-7500 is a Postscript compatible laser printer. As well as Postscript, the EPL-7500 is also capable of emulating the Hewlett-Packard LaserJet II, which is very useful as not all applications support Postscript files.

Epson claims the machine is capable of printing A4-sized pages at a speed of six pages per minute (ppm) and we found nothing to dispute this. Its maximum resolution is 300 dpi per inch (ppi), while these features are relatively common these days, the Postscript capability on its own is worth looking at.

SETTING UP

In comparison with many other laser printers the Epson is physically unusual. It is longer in width than depth, and its paper tray sticks out at the front of the machine instead of sitting on top and being part of the printer's natural footprint.

The printer can be hooked up by either its serial, parallel or Appletalk ports. The Amiga and ST, like most machines, use the parallel port to transfer data to the printer. Apple Macintoshes would also be able to use the built-in Appletalk interface. Two computers can be connected to the printer at once, so long as the Appletalk and serial ports are not used simultaneously.

Several disks are supplied with the printer for the

POSTSCRIPT SOFTWARE

AMIGA

Postscript 3.0 Professional Suite

ATARI ST

Postscript 3.0 Toolkit/Basic/Advanced/Color/Windows/Braille/Utility/Device



• Epson's first Postscript laser printer is physically large compared with other printers, but does its size correspond with the number of features it offers?

PC and Macintosh. They contain drivers for applications software to use the printer's own characteristics. Amiga and ST owners who want to use the printer can use its Postscript and HP LaserJet II emulations. Most applications software includes drivers for the HP LaserJet II whereas Postscript support is rapidly included with serious word processing and desktop publishing packages.

IN CONTROL

A liquid-crystal display (LCD) shows the printer's settings. Arrow keys on the printer's control panel switch between different options such as the interface the printer is being controlled from. Once last it's communicating with the computer and by what method the paper is being fed.

Once the control panel is learnt, the printer's menus are easy to change. There are two different menu selections to work from, which access other straightforward sub-menus. The LCD screen is informative and spells out problems when they arise.

However, solving these problems is another matter. While nothing drastically wrong happened during the review period, the problem section in the manual isn't overly helpful at doing what it's there for.

One potential problem for Postscript printers in general is that they need a lot of memory to store and subsequently print page information. This isn't a problem with the EPL-7500 as it comes with 2Mb as standard which is about the minimum amount required for desktop publishing. Postscript printers with less memory can still work, but it would take a lot longer for the page(s) to be set up and printed.

The imaging cartridge the Epson uses is supposed to last for 6,000 pages, which, Epson estimates, is about six months. Replacement cartridges cost £119, which is a fairly standard price.



From birds of prey to trains, these are a few examples of what Epson's baby is capable of in Postscript mode.

PUT OUT BY SOME OUTPUT

Print quality in LaserJet mode was not too impressive. Both text and graphics printed at the highest resolution (300 dpi) did not come out too well - the graphics looked jagged. Text wasn't very well defined either, especially when taking into account how long it took to process. It must be said though, if you are going to buy a Postscript laser printer then LaserJet emulation would only be a secondary consideration - it's just nice to know it's there.

However, in Postscript mode the output looked much better and printed considerably faster. This illustrates the ability of both the page language and the printer. Postscript files are sent to the printer in bursts of data, the printer then processes and prints it soon after. Even files of over 300Kb took just over two minutes to send, process and print. In comparison to other Postscript printers this is quite impressive.

For text output, there are 35 standard Postscript fonts included. That is the standard number supported by Postscript printers. Other fonts can be downloaded by PC applications, including WordPerfect and Microsoft Word, or can be defined by the user to be compatible, but the manual doesn't go into this.

PAGE BREAKING OFF

Epson's EPL-7500 is a good printer for Postscript printing. It is fast and the print quality is very good. In LaserJet mode it's not quite so good, but in a Postscript printer this feature would be useful to have, and probably not essential. In terms of its price - £3,999 - it costs a lot more than other non-Postscript printers. This added cost can be explained by the Postscript feature which has to be licensed from Adobe. However, in terms of output quality this extra expense is worthwhile. ■

THE BOTTOM LINE

FOR

- ▲ Postscript compatibility
- ▲ Large amount of memory as standard
- ▲ Fast in Postscript mode
- ▲ Easy to use control panel

AGAINST

- ▼ Large footprint
- ▼ Slow in LaserJet mode
- ▼ Paper feeding sometimes awkward

PRICE: £3,999

WONDER BOX

PRODUCT: CDTV
MACHINE: Interactive Multimedia Machine
FROM: Commodore UK
CONTACT: High Street consumer electronic retailers
COST: £599

Imagine a machine that can hold the entire output of The Beatles and any other 40 famous groups, as MIDI files on one disk. This machine can also teach your children to spell, count, add up and even talk. It can interact with you offering a world of options in which you make the decisions and it carries them out.

You can be Sherlock Holmes, unmasking the Head of the Blackenables, remix your favorite CD, play games, build cities and lose up to any of over 25,000 entries in an encyclopedia that gives you more than words. Choose a subject and as well as text there may be a picture or even a sample of sound.

THE NEXT GENERATION

This is CDTV. It comes in a most black box shaped like a video recorder and requires nothing more strenuous than the ability to push a button on a simple control to bring it to life. A removable cassette at the front holds a CD which can be simple audio, CD with graphics or interactive multimedia. When Commodore announced CDTV (Commodore Dynamic Television) it chose the mid-way multimedia path which utilizes the best existing technology to give you an interactive environment.

The CDTV has a CD-ROM drive for mass storage of video, sound and graphics. For its logic and control, it uses the tried-and-tested technology of the Amiga. All this in a box shaped like and controlled in the same way as a video recorder is Commodore's pitch at the next generation of interactive learning and entertainment.

If you switch on a video, player or a TV set you are entertained but not necessarily stimulated into action. The point of a multimedia system like CDTV is that it is open-ended. At its simplest, it can be used to play an audio CD. In this mode, you don't even need to connect it to a monitor although the clever graphic display on the remote makes it easy for ever the most technophobe to persuade it to divulge the secrets of their favorite disc.

Instead of watching a production for pure entertainment, you are able to 'get in' and make decisions

One step up from audio CDs is CD with graphics (CD + G). This has been widely publicized but not much has been seen. The occasional video track wanted on to an audio CD has been its limit until CDTV. Now we are seeing a wide range of discs planned from learning packages, where a voice-over is illustrated on screen to Karaoke discs, where the words are displayed in time with the music.

GET INTERACTIVE

The area in which CDTV shines most is as an interactive machine. Instead of watching a production for pure entertainment, you are able to 'get in' and make decisions. A CDTV disc has up to 600MB of storage space and because a CD is digitally catalogued, this information can be accessed at any point within seconds. Unlike normal entertainment such as a video, there's no need to run a tape head to end and making a choice from an on-screen prompt can access anywhere on the disc.

A simple application would be a disc with a program of learning on it. As well as utilising the con-

Keith Pomfret bought a crate of beer and invited the neighbours round to see how Commodore's CDTV multimedia machine competes with satellite TV, NICAM and video

power of CDTV, it could contain a vast array of choices on the 600MB disc. More complicated titles could have anything from an audio visual encyclopedia to a complete interactive virtual world.

Any machine imparting entertainment, information and data can only be as strong as the titles that are available on it. Whereas on a computer we say software, in multimedia the buzzword is title. CDTV has hardware from the Amiga so, there is bound to be a confusion over whether it is running a title or software.

HOME TRIAL

We took the CDTV home, made room for it in among the NICAM boxes, satellite decoders and video recorders. We fed its output to a huge 25-inch TV monitor and a stereo amplifier and speakers.

The Amiga heritage of the CDTV means that it can be connected to just about anything. Video ports enable connection to a standard television, a composite monitor or an RGB monitor.

Using CDTV with a regular TV takes the sound to the TV via the modulated signal but to take advantage of the sound options available, a stereo amplifier and speakers are necessary.

A pair of stereo phone outputs take the audio signals from CDTV and a headphone socket on the front of the cabinet gives private listening via any headphones with a standard 1/4-inch stereo phone jack.

Most users buying a CDTV as an extension to their TV and video won't need to use any more of the connectors than those that give basic video and audio, but people wanting to dig deeper and utilise the computer hardware within CDTV will be grateful of ports for keyboards, joysticks, floppy disks, modems, printers and an internal expansion designed to take a graphics card.

The computer side of CDTV is completed with a slot for memory expansion to complement the 1Mb of on-board RAM. This could be used for RAM or ROM cards from 64K to 512K.

MULTIMEDIA

THE CDTV CHALLENGE

WHAT THE PEOPLE SAY

We set the CDTV up as part of the normal living room entertainment system to get the reaction of the neighbours. John, 43, whose interests lie in video and cartoons and is currently unemployed, was impressed. He sat back on the sofa and casually cast his eye over the CDTV remote control.

"Just like the video," he said. The encyclopaedia impressed him and he soon came to grips with the idea of music and pictures to complement the words. A smattering of classical music in the entry for a composer brought a gleam of recognition: "That's an adverb on the TV," he said.

We dragged John away from the CDTV for long enough to let his sons Steve and Mike get to grips with Lemmings and a couple of the interactive adventure games. Control of a game can be passed from player to player with the infra-red remote control. Although not a very aerodynamic projectile, the remote control was accurate and light enough to throw across the lounge.

MORE THAN A FANCY TELEVISION

It took a long while to persuade the boys to go home and when they did finally go after just one more game, there was no respite. We invited in school teacher Andy to evaluate the educational aspects of the machine.

Andy seemed abashed in the Sunday papers but admitted to confusion. "This adds yet another fact that it's good and state-of-the-art but they don't actually say what it is," he mused. A couple of hours working through the educational titles confirmed that it would be welcome at St Bede's RC primary school. "The only problem I'd have justifying it is the fact that it's a fancy television," he said.

We plugged in a disk drive, added a keyboard, removed from an Amiga B2000 and he went away thoughtfully composing a letter to the headmaster.

KARAOKE PARTY

Musician Paul Dohr thought that the CDTVs MIDI ports were a good idea. "The thing that made the Amiga ST popular amongst the masses is the MIDI. This machine blows Alan's offering into a corner. It'll take some work to make the sequencers as good as those available on the other machines, but the huge CD drive more than makes up for it," he said.

He pointed to the slot for a memory card: "From the 10,000 songs you could have as MIDI files on a CD, you could load say a 40 minute set into that. As you arrived at a gig, you could decide on what's appropriate for the audience and build a setlist on site."

We pointed to the Karaoke discs and we were in business. Paul plays a hotel gig on a Saturday night and between his sets normally puts on a tape. The CDTV, a couple of Karaoke discs and a professional sound system had the 200 plus audience singing along. The CDTV plugged into the hotel's TV network and if only there'd been a few more Karaoke discs...

The more astute CDTV gameurs might guess that there was a computer somewhere under the matt black cover and when shown its Amiga capabilities, no-one was surprised. The overall impression was that CDTV is a good idea, fun to use, easy to set up and start and was an ideal complement to a TV and video setup. Its simple user interface and remote control meant that it was comfortable to use from anywhere in the room.

There are a couple of dozen strong titles, a dozen or so questionable ones and a whole multitude of Amiga software that will run on it. If the developers stick with it, CDTV will be an enormous success. The only other possible home multimedia machine in the frame is the Philips CD-L, the launch of which is a year away, and the anticipated price will be twice that of a CDTV. ■

IS IT A BIRD? IS IT A PLANE? NO, IT'S CDTV

TITLES

Before you even look at titles designed for CDTV, there is a vast array of existing CDs that will run on the CDTV. Any conventional audio CD or CD with video will run.

The titles that are CDTV specific fall into two groups. There are those based on existing Amiga software, and those designed for the interactive multimedia environment.

Here are some of the first CDTV titles to arrive:

■ **The Hutchinson Encyclopedia**
With the disc in the CDTV, a three minute guided tour takes you through the features of the encyclopedia. It is based on the Hutchinson single volume encyclopedia and offers pictures, maps, sound, music,

help, and information. The option of sound and video with the description gives an encyclopaedia with the ability to create a complete description archive.

Commodore is quite rightly proud of Hutchinson and cites it as a true example of interactive learning.

■ **A Rain for Barney** is an interactive story for young children. The computer graphics combine with a story told by former Doctor Who, Tom Baker and enables the child to join in a discipline-making process.

The story culminates in the making of lead command bars and there's even a hedge for making them.

A Rain for Barney is an educational title for children aged three to six.

■ **Psycho Killer** presents a Psycho classic of gory entertainment which it fails to deliver. The idea is that you wander through a virtual world of video snapshots, collecting clues and evidence to bring the villain to book.

The quality of the images and the somewhat quirky interface make it an infuriating task. This is a pity because this is the sort of puzzle solving that could make much better use of CDTV's features.

With more attention to quality and detail, this interactive adventure could become a cult on CDTV.

■ **Stile City** needs no introduction as it is already available as software on most home computers. It gains playability from the vast amount of data that can be stored on a CD and the infra-red remote control makes it simple to play from the armchair.

■ **The Fred Fish Collection on CD-ROM** is more of a computer biff's Christmas present than a true multimedia title. It is a collection of the first 400 or so Fish disks for the Amiga. These represent a huge collection of Public Domain software running to hundreds of megabytes but they are first and foremost computer titles. A lot of them need a GIGWERTH keyboard to run and although it's useful to have so many programs in one tidy package, someone buying CDTV as a consumer electronics product will be baffled at a product needing the Amiga Workbench to run properly.

■ **CD Remix (DJ in a box)**, This is an interesting editing title that lets you edit, cut and paste samples and synapses from audio CDs to produce your own mixes. The instructions take you through the features of the CD Remixer, showing you how to cut, edit and remix your CD. If you're lucky (T) enough to even a copy of Madonna's *Like a Prayer* Collection, there's a demo which shows you the power of interactive mixing.

■ **Women in Motion** is a late 19th century study of the female form by Edouard Manet. It is a collection of early photographic animations of scantily clad and naked ladies going through the motions of such mundane tasks as walking, climbing and breaking water all over each other. It is cast as Art and leisure entertainment for adults but is more of a curiously than a vision of Victorian erotica.

■ **Other interactive titles available** include *Wrath of the Demon*, bedged as entertainment, *Hound of the Baskervilles* which casts you in the role of detective, *Sherlock Holmes and Lenore*, the infuriating cutaway puzzle game that has taken all of the major computer formats by storm this year.

■ The CDTV can also read and play CD + G discs with graphics as well as sound. While looking CDTV over, we ran a couple of *Karaoke* discs on it and were impressed enough to take it along to a gig on a Saturday night.

Hutchinson and Lemmings come in the box with CDTV. All of the other titles are available through companies distributing CDTV.

Titles vary in price from around £15 to upwards of £50 for some of the heavyweight serious titles.

ACCESSORIES

The accessories due for CDTV are a keyboard, infrared mouse (called hamster because there's no tail), joystick, tracker ball, disk drives and other add-ons yet to be announced.



COMPETITION

At present CDTV is the only player in the field. Philips is standing in the wings with the CD-i system which has a more comprehensive specification than CDTV, but it is a year away and more expensive.

Commodore plans a CD-ROM drive for the Amiga which may in itself prove to be a competitor for CDTV.

CD-ROM will surely help the development of titles, but could curb sales of the CDTV machines.



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The IBM PC AT trundled along at around 8MHz when it was first introduced by IBM. The combination of this and its 16-bit architecture gave it an impressive lurch of speed when compared with the slower 4.77MHz XT.

Times have changed and AT owners are looking for a way to upgrade to the faster more streamlined 386 environment

FOUR STEPS TO HEAVEN ON YOUR MACHINE

- 1) What speed did the PC/XT originally run at?
 - a) 4.77MHz
 - b) 4.79MHz
 - c) 4.78MHz
 - d) 5MHz including VAT
- 2) Which company distributing the SOTA Express/386 has the telephone number 0235 559844?
 - a) CTS Sales and Distribution
 - b) CRS Retail Supplies
 - c) EPO Telephones
 - d) BBC Enterprises
- 3) Which of the following central processors runs the fastest?
 - a) Intel 8086
 - b) Intel 80186
 - c) Intel 80386
 - d) Intel 80386SX
- 4) In what year was milestone designer Seymour Cray born?
 - a) 1908
 - b) 1907
 - c) 1905
 - d) 1840

When you've answered the questions complete the following tie-breaker in less than 12 words: I need rocketing up to the breathtaking speed of 25MHz because...

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STAFF WRITERS-Lesley Godden • Elizabeth
GARRETT/PEPPER-Elizabeth Campbell
PHOTOGRAPHY-Fiona Mayes

CONTRIBUTORS

• Steve Best • Jason Collett
• Michael Cohen • Roger Edwards
• Tony Gaskins • Trevor Avery
• Andrew Gibson • Paul Hartman
• Richard Hutchinson • Alan Roper
• Paul Lister • Paul Mayes

• Michael Jackson • Steve Hartley

• Alan Koenig • Mark Lovell

• Michael Mallon • Steve Pearce
• Alan Perner • Michael Armand Gaylor
• Chris Hartley

• AD PRODUCTION-Karen Perner

• DESIGN SETTING-Steve Pearce

• PRODUCTION TECHNICAL-Smart Kidder

• Chris Gash • James Design

• PUBLISHING-Steve Pearce

• ADVERTISING-Circulation-Jonny December

• VIDEOTEX-Steve Pearce

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